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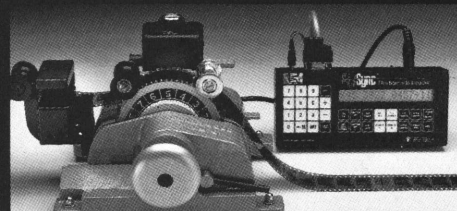


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4	79'0"	68'6"	27'10"	5,419
5	139'0"	64'0"	23'4"	8,896
6	139'2"	62'8"	19'10"	8,742
12	198'8"	146'4"	49'2"	29,104
12A	68'0"	99'4"	28'2"	6,759
14	80'0"	74'6"	29'0"	5,968
15	75'0"	70'0"	28'11"	5,250
16	80'0"	74'8"	28'8"	5,984
17	144'0"	69'6"	28'10"	10,022
18	143'8"	74'3"	29'1"	10,684
19	143'4"	74'4"	27'10"	10,669
20	143'6"	74'0"	27'1"	10,626
21	76'5"	67'9"	29'6"	5,194
22	156'5"	73'4"	27'0"	11,487
23	157'0"	76'0"	28'1"	11,932
24	158'0"	111'6"	33'4"	17,633
25	157'2"	111'7"	33'4"	17,559
27	199'2"	99'0"	39'10"	19,721
28	142'0"	98'5"	43'11"	13,987
29	141'0"	97'5"	30'0"	13,747
31	141'4"	97'0"	30'0"	13,716
33	98'6"	69'3"	25'0"	6,833
34	98'6"	69'2"	25'0"	6,823
35	98'6"	69'2"	25'0"	6,823
36	98'6"	69'2"	24'11"	6,823
37	139'8"	99'9"	30'0"	13,966
41	139'8"	101'8"	30'1"	14,232
42	140'0"	101'9"	30'0"	14,266
43	140'0"	101'8"	30'3"	14,252
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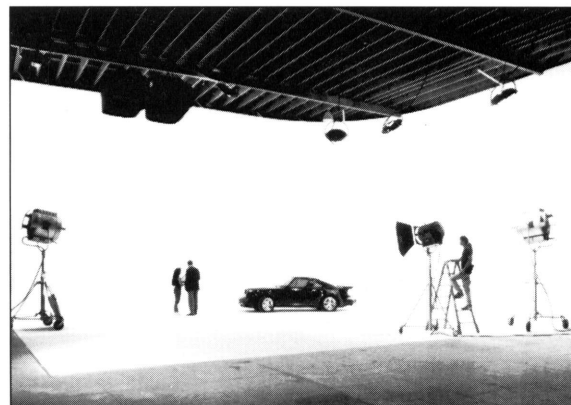
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On Our Cover: An emotional moment from *Heaven and Earth*, as captured by cinematographer Robert Richardson, ASC (photo by Roland Neveu, courtesy of Warner Bros.).

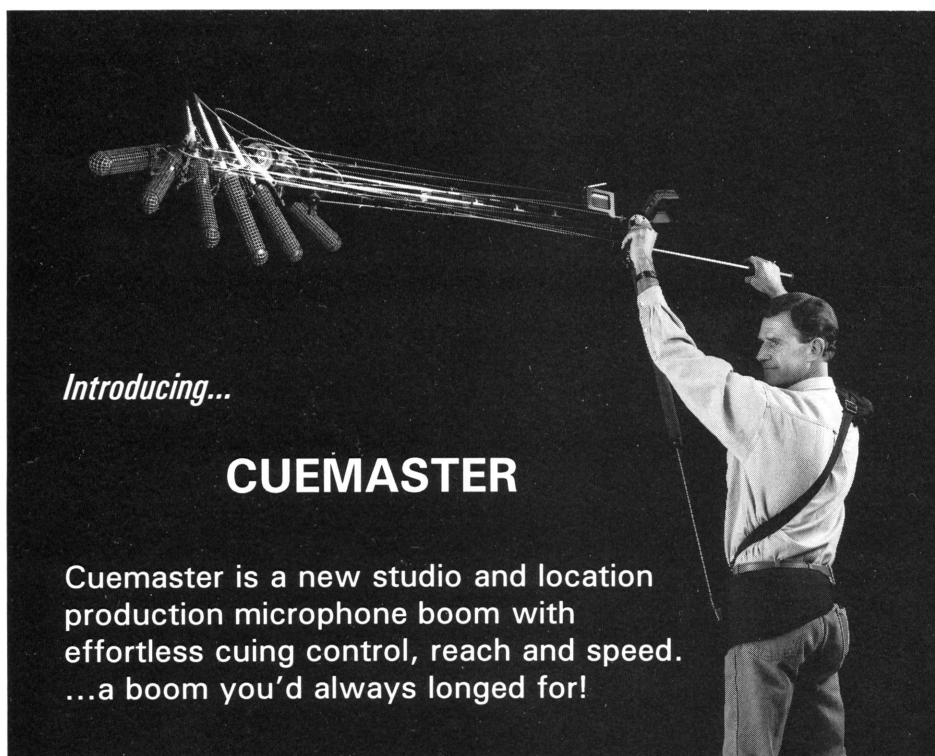
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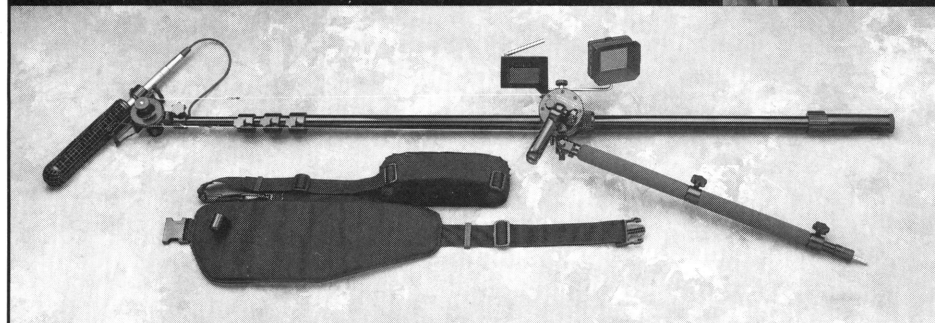
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American **Cinematographer**

February 1994 Vol. 75, No. 2

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American Cinematographer (ISSN 0002-7928) established 1920 in 74th year of publication is published monthly in Hollywood by ASC Holding Corp., 1782 N. Orange Dr., Hollywood, California 90028, 1-800-448-0145, 213-969-4333, U.S.A. Subscriptions: U.S. \$25; Canada/Mexico \$40; all other foreign countries \$50 a year (remit international Money Order or other exchange payable in U.S.). Advertising: rate card on request to Hollywood Office. Fax 213-876-4973. Copyright 1994 ASC Holding Corp. Second-class postage paid at Los Angeles, California and at additional mailing offices. (All rights reserved.) Printed in the USA. **POSTMASTER:** Send address change to American Cinematographer Magazine, P.O. Box 2230, Hollywood, CA 90078.

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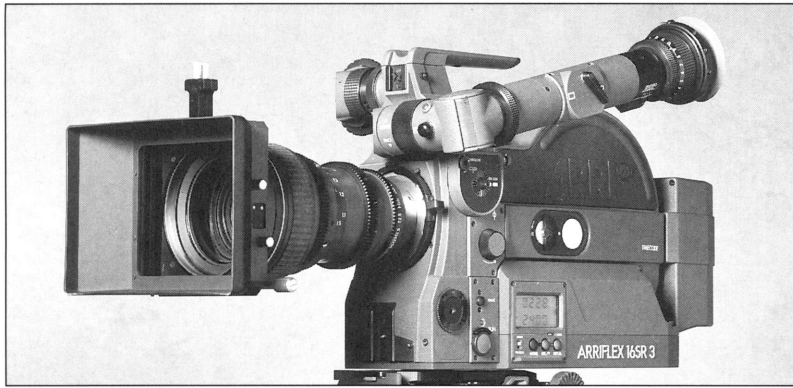
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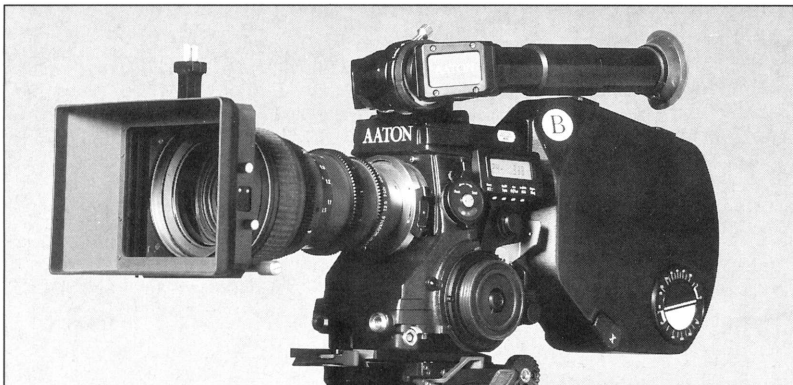
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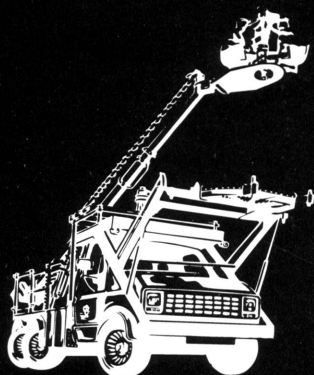
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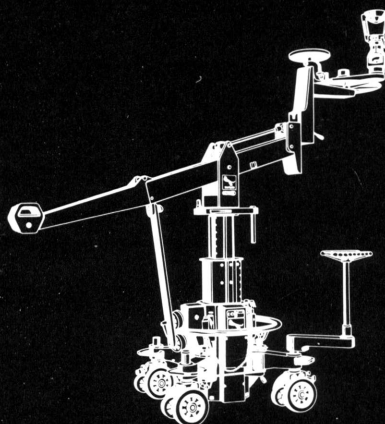
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Now: a slot for filters and hard mattes in the aperture plate on BLs at Clairmont

Many people like the wide latitude, color balance and shadow rendition of the fast new emulsions, even out of doors. But they don't like working at T22 in open shade. They don't like trying to see through the viewfinder with five stops of ND filter on the lens.

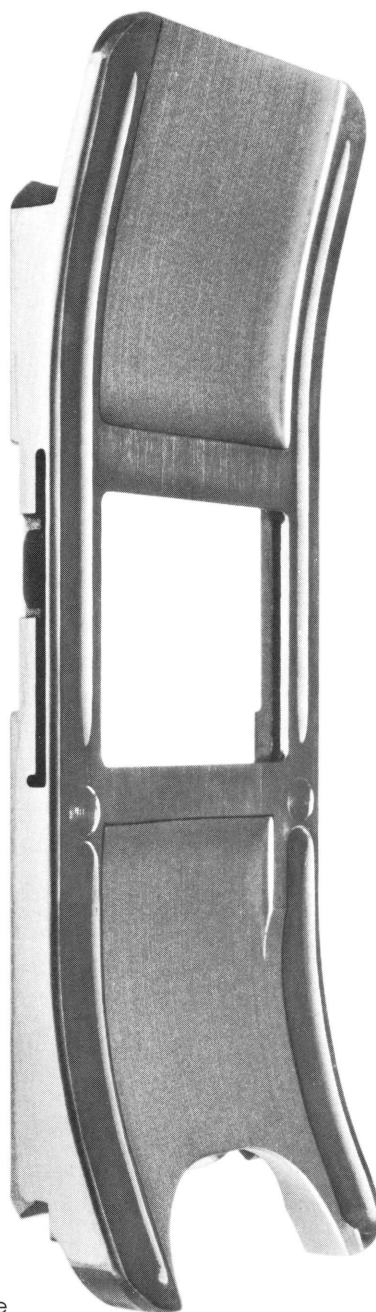
Brighter finder image

So we've cut a slot in all our 35BL aperture plates. With a 2.0 ND (6 $\frac{2}{3}$ stops) in there, you can shoot 5296 or 97 in direct hazy sun at around T5.6 or T8. The ND is not in the viewing path, of course, so you can clearly see through the finder.

Controlling depth of field

Even with slower emulsions, the gate filter system is helpful. Example: Without making the finder image too dark to see through, you can throw the background out of focus on your wide shots, to match the shallow DOF on your close long-lens shots.

In the aperture plate photo at right, you can see the new slot next to the aperture



It's easier to see with the 85 inside

Whatever film you use, colors obviously look brighter and more natural through the finder (and on the monitor) if there's no 85 on the lens. With the 85 at the gate, grad filter effects are easier to judge. In low light, it's easier to focus by eye.

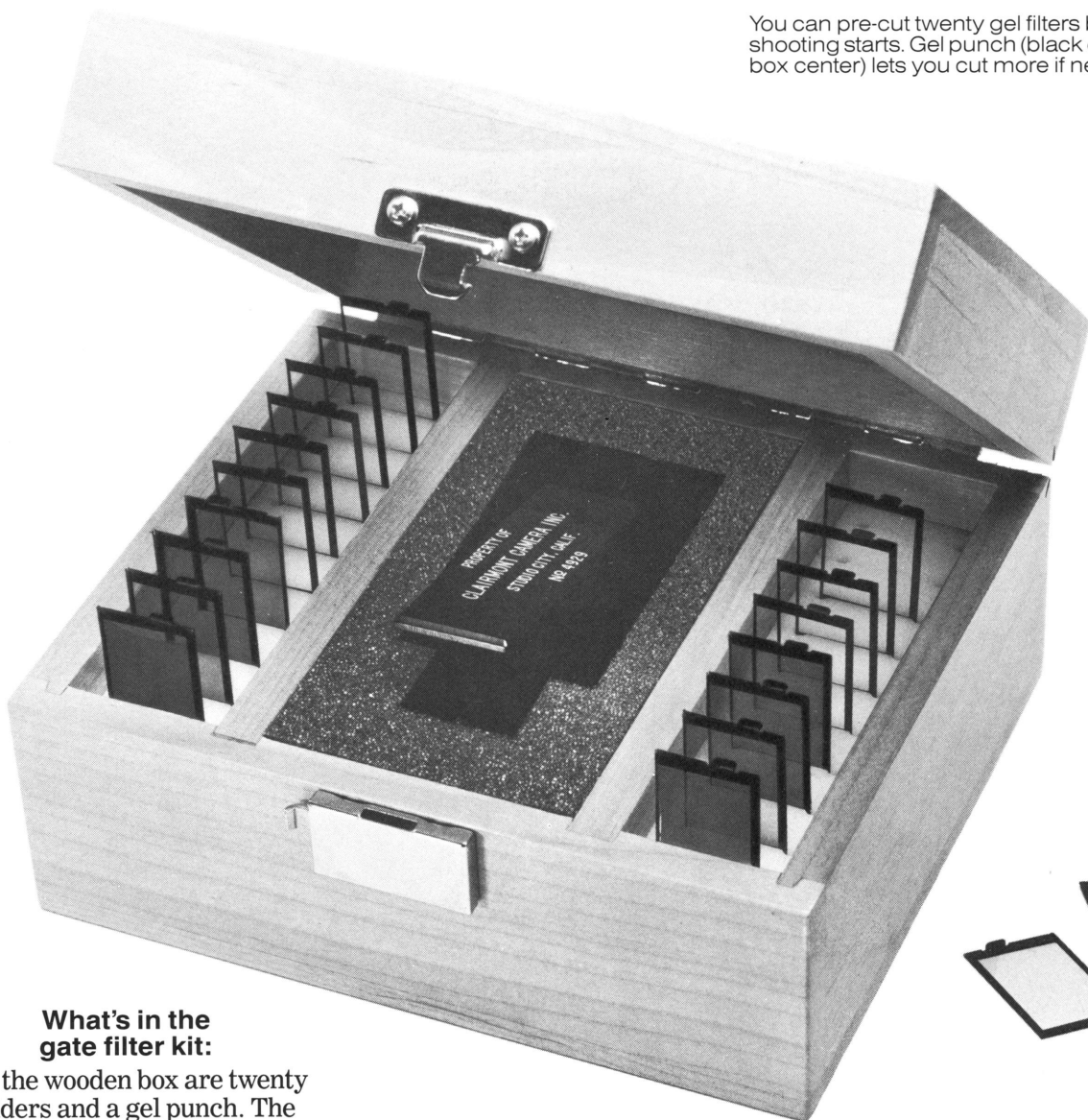
Hard mattes of your choice

We can also give you hard mattes in any format. All our BLs have full-aperture gates (except on special order). Now you can insert a matte in any of the wide-screen aspect ratios. Or any *shape*—round, keyhole, binoculars, whatever you'd like. There's room for only one thing in the slot, though. You can't use a matte and a filter at the same time.

Looking better at the Dailies

Let's say you put a Super 1.85 hard matte in the gate. Your composition for that format is clearly defined on the screen, which can be helpful at the Dailies. The matte can also protect your top and bottom frame lines when the movie is massacred for TV.

You can pre-cut twenty gel filters before shooting starts. Gel punch (black object, box center) lets you cut more if needed



What's in the gate filter kit:

Inside the wooden box are twenty gel holders and a gel punch. The gel holders slide into the aperture plate slot. The punch cuts gelatin to fit the holders. In fact, it cuts slightly *longer* than needed, so you can handle one end of the gel as you put it into the holder.

How filters affect back focal distance:

All filters refract light rays, of course. They do it wherever in the light path they're positioned, regardless of which lens or camera they're used with.

Focus shift

The image displacement is about one-third the thickness of the filter. The typical gelatin filter is .0045 inch thick. So the image is focused .0015 inch (.0381mm) behind the film plane.

Where it's critical

The depth of focus on most lenses is enough to take care of it. There's

a potential problem only with fast wide-angle lenses at or near maximum aperture, particularly at or near Infinity. And with fast, wide zooms, also at or near wide open and at or near Infinity.

Our tests

We ran some tests with the Zeiss 16mm T2.1, the 18mm T1.3 and the 20mm T2.1; and with the Cooke 18-100mm zoom. Here's what we recommend: With a gel gate

filter, you shouldn't open wider than T2.8 on those lenses. Longer focal lengths are fine wide open.

Recollimation to compensate for gels

If your job calls for using lenses wider than 16mm at Infinity and near wide open, we'll be happy to recollimate the camera for you. In that case, you'll need a gel in there all the time—a clear one, if necessary.

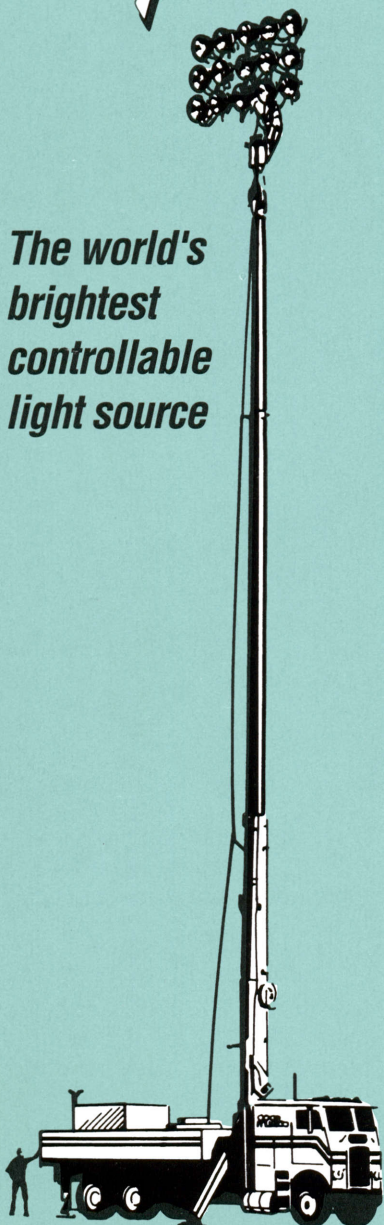
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Letters

The 65 Millimeter Question

Regarding the 70mm process, I have never been lucky enough to find a clear explanation as to why the camera negative film is 65mm wide and yet the release prints are 70mm. Of course, space is provided for the soundtracks on each side of the release print, but I cannot believe that the raw stock is 5mm narrower for purely economical reasons. As this is the only process not using the same width for the negative and the positive (apart, of course, from the systems using optical frame repositioning), does this not cause any technical problems, especially during the contact-printing process (different sprocket widths, etc. . .)?

I would be very grateful if any of your readers could enlighten me on this point.

— Carlo Piaget
France

Obtrusiveness and Obsolescence

As a reader of *American Cinematographer* since 1930, and as a retired assistant cameraman who logged some 30 years working alongside many of the best cinematographers on both coasts, I feel prompted to comment on a letter which appears in the December issue.

Richard Clabaugh's letter criticizes the article "The Non-Obtrusive Camera" by Karl Malkames, ASC (*Filmmakers' Forum* September). It seemed to me after reading this piece that it contained much good thinking which could be put to good use in making pictures these days.

To say that a lot has happened in pictures during the past two decades certainly would be an understatement. Techniques have been changed and altered to coincide with new methods, newer equipment and, to be sure, newer talents in all departments. This, however, is not to say that the rules we followed a generation ago are to be trashed

and discarded. Nor does it necessarily follow that the cinematic skills we used have become obsolete.

Billy Wilder was once quoted in making an observation, "... he's gotta show he's a genius in every goddamn frame." How perfectly apropos today. The heavy-handed devices we see used in pictures today reflect total disregard for good taste on the part of both directors and cameramen, and are probably the result of a crying need for recognition.

Most of the things stated in Mr. Clabaugh's letter are quite true — but don't say a person who believes in tried-and-true methods which have served this business well for 65 years is living in the past. Such a statement is the essence of absurdity, in spite of today's free thinkers.

No matter how you slice it, there is still only one way to make a good picture. Do it right.

And thanks for the use of the hall.

— Al W. Kern
Moab, Utah

Brave New Matte World

Ron Magid's article "CGI Spearheads Brave New World of Special Effects" (*AC* December) quotes Scott Ross, one of Digital Domain's founders, as saying, "If I was a producer and wanted traditional matte painting, I'd go someplace like Matte World." We would like to thank Mr. Ross for his gracious comment. However, if he had gone to Matte World, he would have found that we have already produced digital mattes for Morgan Creek's *Ace Ventura* and are currently using digital matte processes on Universal's *The Shadow*, Disney's *Tall Tales*, and CAA's latest Coke commercial. We also still use traditional matte painting techniques because they are frequently the best way to achieve the most credible illusion.

Also, I would like to add that almost all members of the visual effects

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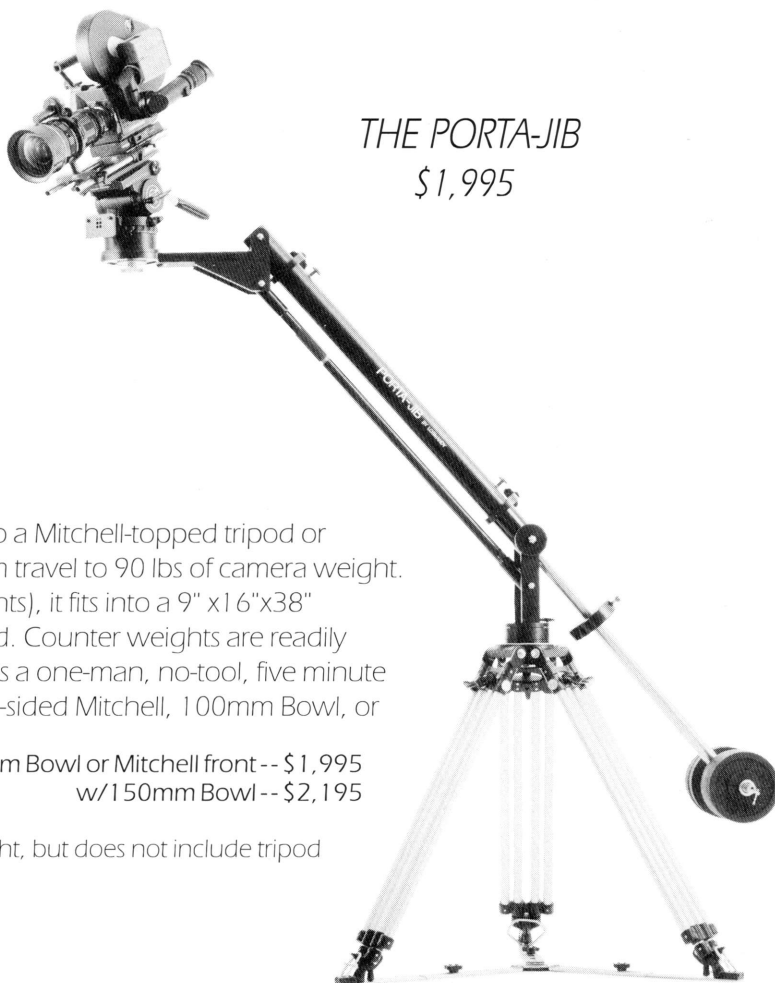
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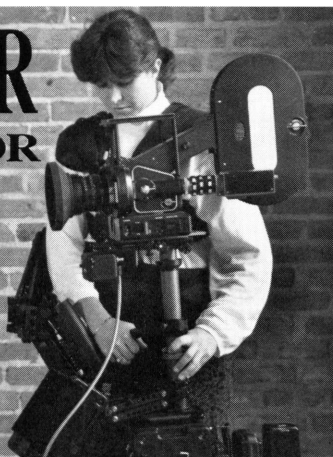
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community have the same SGI computers and software. Similarly, we all originally had motion-control systems, VistaVision cameras, optical printers, etc. The difference is in the talent and artistry necessary to create a realistic matte painting illusion.

— Craig Barron
Michael Pangrazio
Matte World
Novato, CA

Film Finance 101

I have been accepted into the film foundation program at the Vancouver Film School. Since I am 22 years of age, my financial capabilities are a little sluggish. Subsequently, I am applying for every type of scholarship and financial aid under the sun. I was wondering if your publication knows of any kind of film student aid that is available.

— David B.
Oregon

We suggest referring to American Film Institute's Guide to College Courses in Film and Television. If it isn't in your public library, you can contact AFI's Publications Dept. at 2021 N. Western Ave., Los Angeles, CA 90027, (213) 856-7600.

— Ed.

More Shoestring Coverage, Please

I'm a young filmmaker and have been an avid reader of *AC* for many years now. I'm writing to express to you and your contributors how much I enjoy and appreciate the magazine.

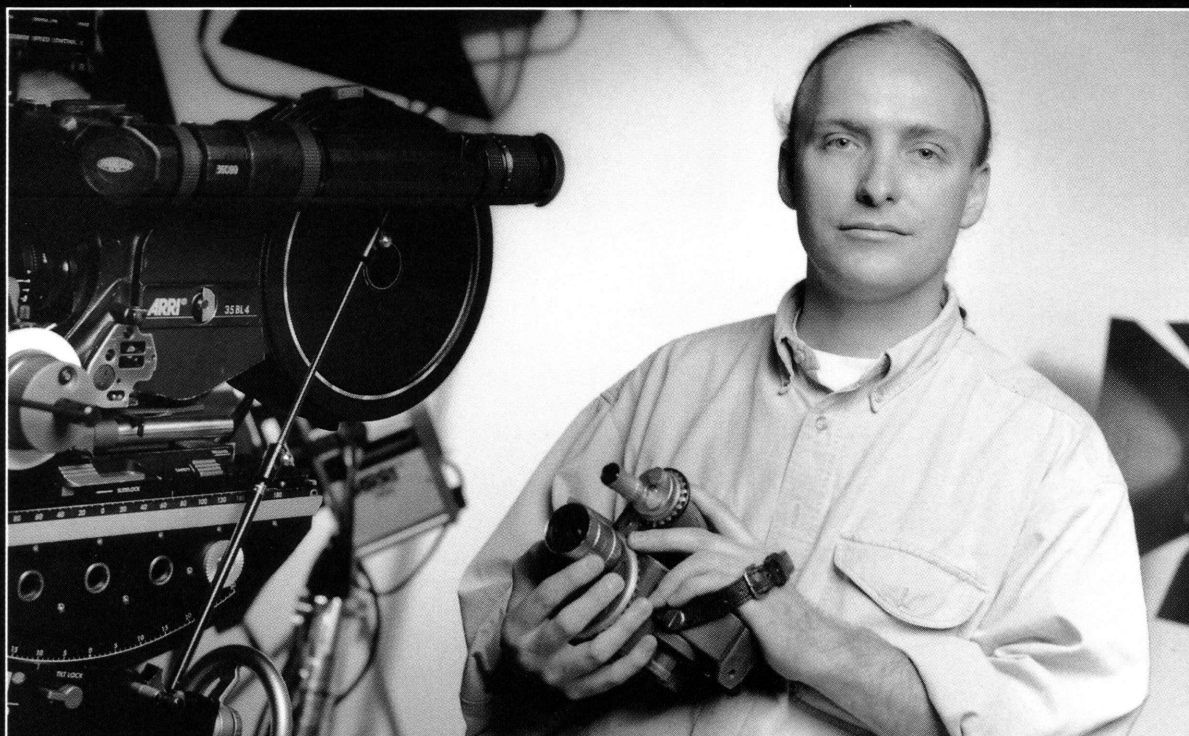
I'd also like to encourage you to continue coverage of lesser-known, lower-budget projects. For many readers they can be more easily related to and appreciated. Don't get me wrong: I really enjoyed your coverage of *Back to the Future* and *Jurassic Park*, but I'm sure even Dean Cundey started out with a Bolex or an old Arri ST.

Also, may I be so bold as to suggest that you include a filmography of the cinematographers discussed in your articles?

On another note, I've enjoyed your recent coverage regarding new editing technologies and how the future will look in this area. I eagerly await the next issue.

— Arthur Tarnowski
Montréal

Photo: Rick McGinnis



1993 Gemini nominee, Best Photography in a Dramatic Program. CSC Award Best Dramatic Short Cinematography 1993. Recent credits: "The Adjuster", "Petrograd", "Love and Human Remains", "Terminal City Ricochet".

Why Paul Sarossy puts his faith in the Fujicolor F-series.

Cinematography is a marriage of science, art and politics. The balance of these distinct disciplines is the cinematographer's constant concern, and will effect every choice made. One of the first choices is: which tools to use? A cinematographer is confronted by an array of tools: cameras, lights, lenses, film. Each are integral to shooting a film. The selection of a particular type of tool is done after careful consideration of a project's needs. Once this is done, the tools should be forgotten and merely become an extension of the cinematographer's eyes and hands. They are conduits for telling a story. A preoccupation with the tools themselves can only undermine the effort. To be able to forget one's tools, in so technologically dependant a craft, assumes a tremendous faith in them. We should proceed without fear to the limits of our imagination, trusting the performance of these tools. Fuji film is such a tool.

Paul Sarossy

Paul Sarossy C.S.C.
Director of Photography

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A Whirlwind Tour of Locations

compiled by Marji Rhea

Alaska

Alaska was the backdrop for two feature films this year. *Spirit Warrior*, starring Steven Seagal, is an eco-themed action-adventure tale that chronicles the rescue of an Alaskan oil worker by an Eskimo tribe who regard him as a mythic figure, the Spirit Warrior. *North*, a Rob Reiner film, will be shot on location in numerous states, including Alaska. The three-week Alaska shoot took place on several glaciers and in Prince William Sound.

Spirit Warrior and *North* mark the twelfth and thirteenth feature films to be shot in Alaska. Alaska's other feature film credits include *White Fang* and *Runaway Train*, as well as cameos in *Star Trek VI*, *Leaving Normal* and *The Hunt for Red October*.

The Film Office was created by the Alaska Division of Tourism in 1983 to increase awareness in the film and television industry about Alaska's potential as a prime shooting location. Since its inception, more than \$25 million has been spent by crews filming on location in Alaska.

For information: Alaska Film Office, 3601 C Street, Suite 700, Anchorage, AK 99503, (907) 562-4163, FAX (907) 563-3575.

Georgia

The Atlanta Stage Works, a 65,000-square-foot film and television complex, opened its first phase in early March and has already been the location for the production of more than eight television commercials. The largest soundstage production complex in Georgia, the facility includes two soundproof stages; postproduction services including online and offline video editing suites; computer animation; stage production offices; wardrobe and makeup rooms; 15,000 square feet of set storage; and

more than 10,000 square feet of office space. The ASW also leases on-site space to four production-related companies: Feature Systems, Inc., providing grip and electric equipment; Cine Photo Tech (CPT), a camera rental company; Bottom Line, a visual communications company that produces television commercials, corporate films and videos, interactive multimedia, satellite video teleconferencing and music videos; and Villa de Grip, a set design and construction firm.

Located in Inman Park, less than two miles from downtown Atlanta, the new complex provides a cost-effective alternative to New York and Los Angeles for corporate television, feature film and television commercial production. ASW's first client, the fast-food chain Hardees and their agent, Ogilvy and Mather/New York, determined that several hundred thousand dollars a year could be saved by shooting the interiors for their national television commercials in the Atlanta facility, which is perfect for food commercials with its on-site, fully equipped commercial kitchen. Hardees contracted with ASW for three years to use the large stage, set construction and storage capabilities.

For information: Warren Clark & Graham, Inc., 230 Peachtree St., NW, 17th Floor, Atlanta, GA 30303, (404) 221-0700, FAX (404) 221-0307.

Hawaii

Hawaii's International Film Festival is a two-week celebration of the finest Asian, Pacific, and North American cinema. The HIFF also conducts seminars, workshops, special award presentations and receptions, with top Asian, Pacific and North American filmmakers participating.

In keeping with the Festival's goal of promoting cultural understanding

through film, more than 140 films were shown this year, including features, documentaries and short subjects. More than 65,000 people attended, and once again the films were presented free on a first-come, first-served basis at selected theaters in the state.

The Festival, reflecting the theme of "When Strangers Meet," annually brings together filmmakers, directors, scholars, critics and actors, in addition to a diverse moviegoing audience that reflects the cultures and traditions of East and West. Last year audiences saw 22 world premieres and 41 U.S. film premieres from such countries as Japan, China, Taiwan, Hong Kong, India, the Philippines, Thailand, Australia and the United States.

Among the award-winning films shown were Cannes and Berlin Film Festival winners *Farewell My Concubine*, *The Piano*, *The Wedding Banquet*, *Woman from the Lake of Scented Souls* and *The Puppetmaster*.

Other major Festival events were a retrospective of films by the Japanese filmmaker Ozu, the premieres of 16 feature films in the Asian Film Discoveries Program, a series of American independents never before shown in Hawaii, a cinematography seminar with noted cinematographer Allen Daviau, ASC and the first IMAX international film festival.

In addition, the Network for Asian Cinema held its first international conference concurrently with Festival week on Oahu. A record 60 Asian industry leaders, from marketing executives to scholars, participated as guest speakers and panelists during the conference. Sessions focused on how better to promote and distribute Asian films throughout the world. Those attending included filmmakers, distributors, television programmers, exhibitors, critics, curators,



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educators and government officials from East and West.

For information: Hawaii Film Office, P.O. Box 2359, Honolulu, HI 96804, (808) 586-2570, FAX (808) 586-2572.

Kentucky

Pathways Productions' *500 Nations*, a CBS miniseries consisting of four two-hour episodes, filmed in July at Kentucky's Land Between the Lakes and Mammoth Cave. The miniseries interprets 50 native cultures that inhabited much of the North American continent, from Canada's Northwest Territories to Costa Rica, and is narrated by Kevin Costner, who executive-produced the film with business partner Jim Wilson. Costner opens and closes each show and also appears in several segments.

Also filming last fall in Kentucky was *The Congress of Wonders*, a short feature that is a screen version of an *Esquire* story by the same name. Author Ed McClanahan and Academy Award-winning director Paul Wagner collaborated on the script. Set at a carnival side show in 1944, the story follows a young boy's coming of age.

The film received one of six grants from the KET Fund for Independent Production. This fund was established in 1990 by the Kentucky General Assembly to promote and support independent film and video production in the commonwealth and to generate excellent programs for broadcast on KET and other distribution.

For information: Kentucky Film Commission, 2200 Capital Plaza Tower, 500 Mero Street, Frankfort, KY 40601, (502) 564-3456, FAX (502) 564-7588.

Massachusetts

MGM's action thriller *Blown Away*, starring Jeff Bridges and Tommy Lee Jones, started filming in Massachusetts in August. A suspenseful drama about a police bomb expert racing against time as he matches wits with an ingenious bomber, the film is executive-produced by Lloyd Segal and directed by Stephen Hopkins (*Predator 2*, *Nightmare on Elm Street 5: The Dream Child*). Serving as a backdrop for *Blown Away* is historic Boston, juxtaposed with contemporary metropolitan locations. It is the largest film ever to shoot in the commonwealth.

For information: Massachusetts Film Office, The Transportation Building, 10 Park Plaza, Suite 2310, Boston, MA 02116, (617) 973-8800.

Nevada

Elaborate sets were constructed in the middle of downtown Las Vegas for Stephen King's *The Stand*, an eight-hour ABC-TV movie. Other television projects filmed in the state include a Montel Williams Special, *How'd They Do That*, *A Current Affair*, *Unsolved Mysteries*, *Eye to Eye* and *Long Live Las Vegas* for the E! Entertainment Network. *Northwood*, the Canadian equivalent of *Beverly Hills 90210*, also traveled to Las Vegas. *McShane*, starring Kenny Rogers, shot a pair of two-hour NBC-TV movies to be aired once a month in the tradition of Perry Mason. Finally, *Treasure Island* used footage from the implosion of a Las Vegas landmark, the Dunes Casino, in an NBC-TV movie.

Feature work shot in Nevada included scenes in *I Love Trouble*, *Sister Act 2*, *Tall Tales* and *City Slickers 2*. Commercial activity has featured Burger King, MGM Grand, Lee Jeans, Acura, Miller Beer and promotional spots for *Lois & Clark*, MTV and others. Music videos featured Billy Ray Cyrus and Aaron Tipton.

For information: Commission on Economic Development, Motion Picture Division, State of Nevada, State Mail Complex, 3770 Howard Hughes Parkway, Suite 295, Las Vegas, NV 89158, (702) 486-7282, FAX (702) 486-7284.

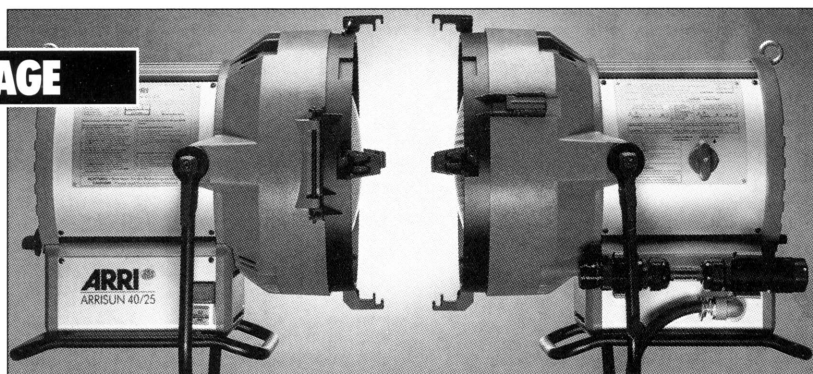
New York

From its opening in April 1986 until this past June, the Jacob Javits Center in New York City had hosted 391 photo shoots, 20 television commercials, and parts of three motion pictures. The Convention Center has more than 900,000 square feet of exhibit space and is the largest convention and trade show center under one roof in North America. It sits on 22 acres of land along the Hudson River, from 34th to 39th Streets on Manhattan's West Side.

The Center is built on a unique "space frame" of interlocking steel supporting structural members. They, in turn, are sheathed with 16,000 panes of coated glass, filtering out the most harmful rays of the sun, while providing a multitude of lighting shades and pat-

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terns. That light falls on 230,000 feet of terrazzo tile flooring, which covers the Crystal Palace and the north and south concourses. On the very top, or Galleria level of the Center, the light brightens the River Pavilion, a ten-story, two-block-long room facing the Hudson River.

The modern Center architecture, with the river as a backdrop, has been the setting for several pictorial efforts for magazines and other publications. Many photographers also make use of the \$16 million Plaza across 11th Avenue from the Center.

Within a few months after the Center's opening, both Vogue Magazine and Avon Cosmetics had brought crews in to use the facility for television commercials. Chase Manhattan Bank, Mercedes Benz, Macy's, HBO, Diet Coke, New York Telephone, Puritan Oil, Audi, Taittinger Champagne and a dozen other companies have also shot commercials there.

Also shot around the Center were the TV series *The Equalizer*, as well as parts of the feature films *Garbo Talks* and *What About Bob*.

For information: (212) 216-2116.

North Carolina

The School of Filmmaking at the North Carolina School of the Arts opened its doors in September of 1992. The new school is the only one of its kind in the South, and the first in the world to be in a position to fully capitalize on the recent breakthroughs in high-resolution video. The philosophy begins with state-of-the-art equipment, unburdened by any investment in older technologies and ready to keep pace with the region's burgeoning film industry.

According to the state's Film Office, North Carolina is the third most popular location for Hollywood filmmaking, behind only California and New York. In 1989, \$314.4 million was spent in the production of 14 feature films and commercials shot around the state. In 1990, that figure rose to 17 features with revenues of \$426 million. Last year, the state received revenues of \$391 million from 59 features.

The Greater Winston-Salem Chamber of Commerce, meanwhile, has developed a plan for converting a former AT&T manufacturing facility into a state-of-the-art multimedia production and re-

search complex. AT&T has agreed in principle to donate the 60-acre site to the Winston-Salem community. The plan proposes to turn the one million-square-foot facility into a major complex that will include soundstages, both large and small, as well as support entities.

For information: The Greater Winston-Salem Chamber of Commerce, 601 West Fourth Street, P.O. Box 1408, Winston-Salem, NC 27102-1408, (919) 777-3787, ext. 1211, FAX (919) 761-1069.

Tennessee

The Tennessee State Film, Entertainment and Music Commission is pleased to announce that *Christy*, a CBS pilot shot in Townsend, Tennessee, was picked up as a series for the 1994 season. The beautiful locations in the Smoky Mountains provided an amazing backdrop for the pilot and will continue to be the home for the dramatic series starring Kelly Martin, Tyne Daly and Tess Harper.

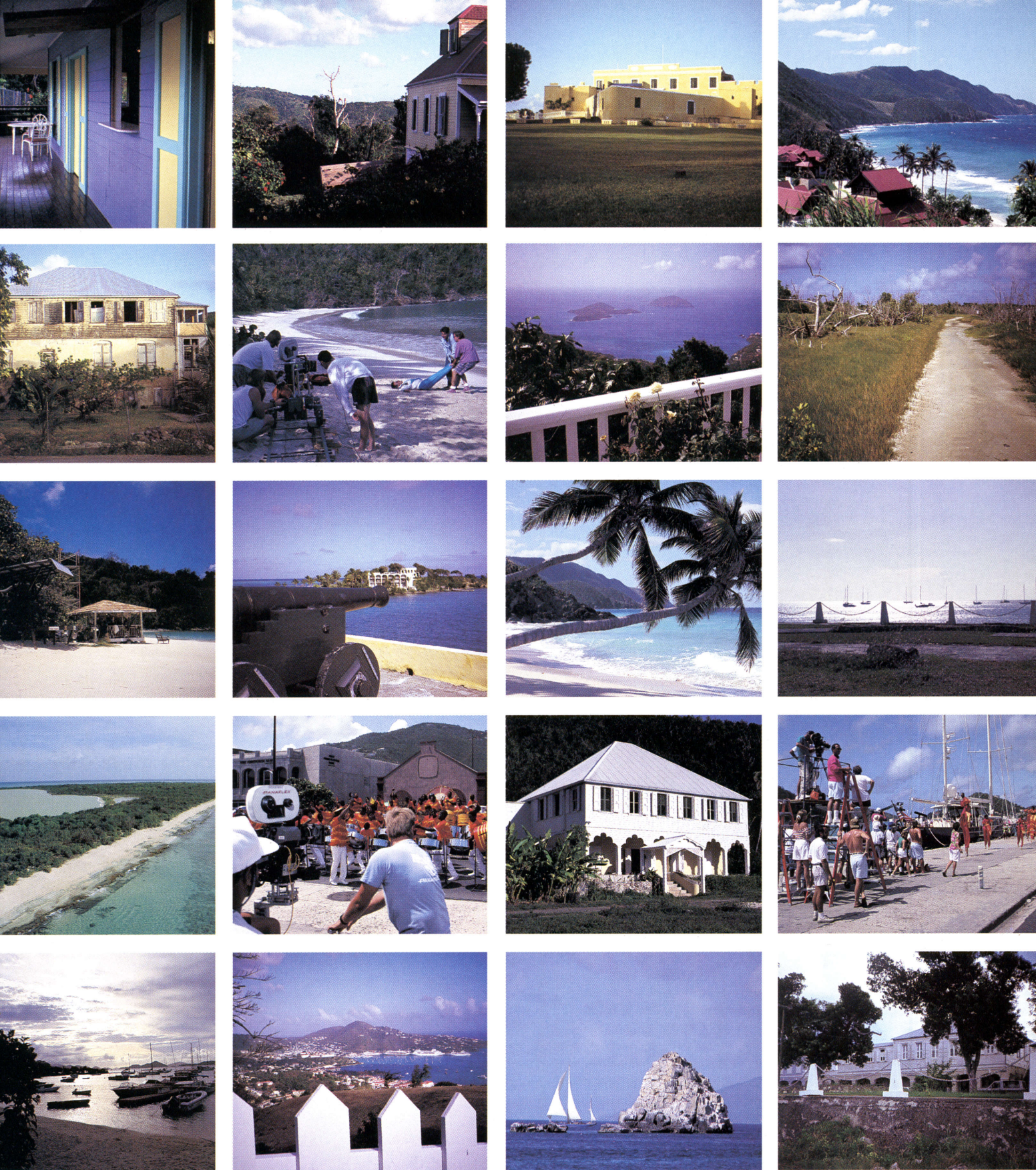
The state has no fewer than four film commissions — Memphis, Knoxville and Nashville each have their own — and a state commission with a 95-county network of local officials ready and willing to make their state a new entertainment capital.

The local government of Memphis and Shelby County was the first to recognize the importance of having a city film recruitment office. Founded in 1985, the Commission has assisted projects ranging from the television series *Elvis* to the feature films *Great Balls of Fire* and *Mystery Train*. In 1992 more than \$15 million was added to the local economy during the production of the feature films *The Firm* and *The Client*. Considering the Commission's annual budget of \$196,000, their investment paid off very well. The area also has a good working relationship with the film commissions of Mississippi and Arkansas, with whom they share jurisdictions.

For information: Film, Entertainment and Music Commission, 320 Sixth Avenue North, 7th Floor, Nashville, TN 37243-0790.

United Kingdom

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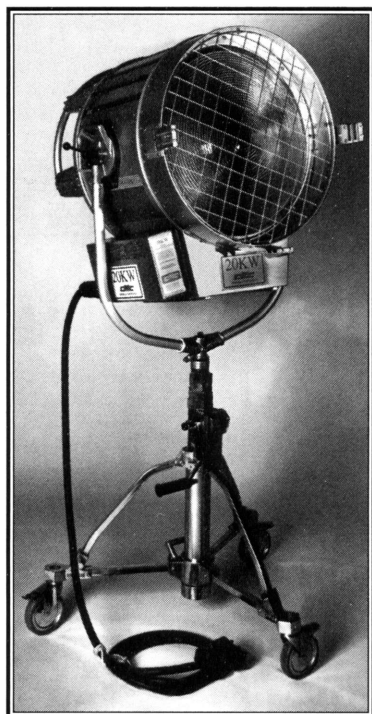
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are being invited to register on the British Film Commission's Film Information National Database, FIND.

Industry professionals will be contacted through the established unions, guilds and societies which represent particular areas of expertise. Individuals may also contact the BFC directly for an application form. As with all other BFC services, there is no charge for registration on FIND.

Now installed at the Central England Film Commission (Birmingham) and at the BFC's London headquarters, FIND is embarking upon its second phase, key production personnel contacts. The personnel section is divided into the main areas of production, design, cinematography and video imaging, sound and postproduction. The database will provide essential details such as telephone number, address, FAX, mobile phone and pager, in addition to industry qualifications, listings of professional awards received and a summary of experience to date. Up to four production credits for each individual will also be held on the database, of which at least two will have been gained during the past five years. The credit list will also give producer contact numbers. The BFC will update the screen credits for personnel on a regular basis.

Details of U.K. personnel will be held at the BFC headquarters in Baker Street, and the U.K. area film commissions will maintain the registration and records of other crew categories. The BFC does not act as a negotiator between the crew member and a production company, but as a research mechanism.

In the two years since the BFC opened its doors for business, it has assisted productions which have injected over £6.3 million cash into the U.K.'s production economy.

For information: The British Film Commission, 70 Baker Street, London W1M 1DJ, 44.71.224.5000, FAX 44.71.224.1013.

Utah

Walking Thunder, starring John Denver and James Read, is currently shooting in the Alpine Loop area of northern Utah. The feature film, set in the 1850s, is based on a true story centering around a pioneer family, a mountain man and a legendary bear. *Walking Thunder*

is the fourth feature to be shot in the state by the Utah-based production company Majestic/Sunset Hill Partners. Joe Brady is the executive producer. The film is produced by Bryce Fillmore and Ray Tremblay. The director is Craig Clyde, who collaborated with James Hennessy on the screenplay.

For information: Utah Film Commission, 324 South State, Suite 500, Salt Lake City, UT 84111, (801) 538-8740, or (800) 453-8824, FAX (801) 538-8886.

Washington

January of 1993 saw the arrival of Bernardo Bertolucci and his epic project *Little Buddha* in the state of Washington. The film intertwines the story of a modern-day search for the reincarnation of a great lama with the tale of Prince Siddhartha and the dawn of Buddhism. Filming took place in and around Seattle after an arduous, months-long shoot in Nepal.

Pilot episodes of two shows filmed in Seattle in March and April: *On the Street*, a drama about a cop on the beat in a fictional city, and *Summer*, the story of several couples in their late '30s whose lives intersect in a small town in Massachusetts.

The Washington State Film and Video Office has also been active in working with the local film and video industry to support the building of a motion picture sound stage at the Sand Point Naval Station when the facility is vacated in 1995.

For information: Department of Trade & Economic Development, General Administration Building, Olympia, WA 98504-0613, (206) 753-5630.

Wisconsin

A made-for-television education film was shot in Lac du Flambeau last summer. *The People of the Forest*, which depicts the Ojibwe culture, survival and heritage, was written and directed by Peter Matulavich, an award-winning filmmaker. The script called for 16 native American actors from age 10 to 50, and auditions were held on the Lac du Flambeau tribal reservation.

For information: Wisconsin Film Office, Dept. of Development, Division of Tourism, State Justice Building, Room 901, P.O. Box 7970, Madison, WI 53707, (608) 267-FILM.

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Upcoming Events

February 3, 1994: Deadline for entries. Week of Experimental Cinema, March 1-8, 1994, Madrid. For information: Victor de la Serna, 34.1.519.8952, FAX 34.1.458.7223.

February 3-5, 1994: SMPTE Advanced Television and Electronic Imaging Conference, Chicago. For information: (914) 761-1100, FAX (914) 761-3115.

February 4-13, 1994: Miami Film Festival. For information: Film Society of Miami, (305) 377-3456.

February 19-26, 1994: Computer Animation and Storyboarding with Autodesk 3-D Studio, Part II (focusing on the application of 3-D Studio in film and television previzualization), UCLA Extension, Universal City, CA. For information: (310) 825-9064.

February 25-27, 1994: Robert Bordiga's Nuts & Bolts Production Seminar, Los Angeles. For information: (800) 755-PROD.

March 1, 1994: Deadline for entries. Movies on A Shoestring, 36th Annual Rochester International Film Festival, Rochester, NY. For information: (716) 288-5607.

March 3-10, 1994: The Asian-American International Film Showcase, Bay Area. For information: (415) 863-0814.

March 5, 1994: "Pixels, Pictures, and Perception: The Differences and Similarities Between Computer Imagery, Film and Video," an all-day tutorial conducted by SMPTE, New York City. For information: (212) 757-4580.

March 4-13, 1994: Santa Barbara International Film Festival. For information: (805) 963-0023, FAX (805) 965-0557.

March 18-20, 1994: Robert Bordiga's Nuts & Bolts Production Seminar, New York City. For information: (800) 755-PROD.

March 20-24, 1994: 48th Broadcast Engineering Conference, 4th HDTV World Conference, and 2nd NAB MultiMedia World Conference, in conjunction with NAB '94, Las Vegas. For information: (202) 429-5478.

March 30-April 1, 1994: International QuickTime & Multimedia Conference and International Film Festival, San Francisco. For information: Sumeria, Inc. (415) 904-0808.

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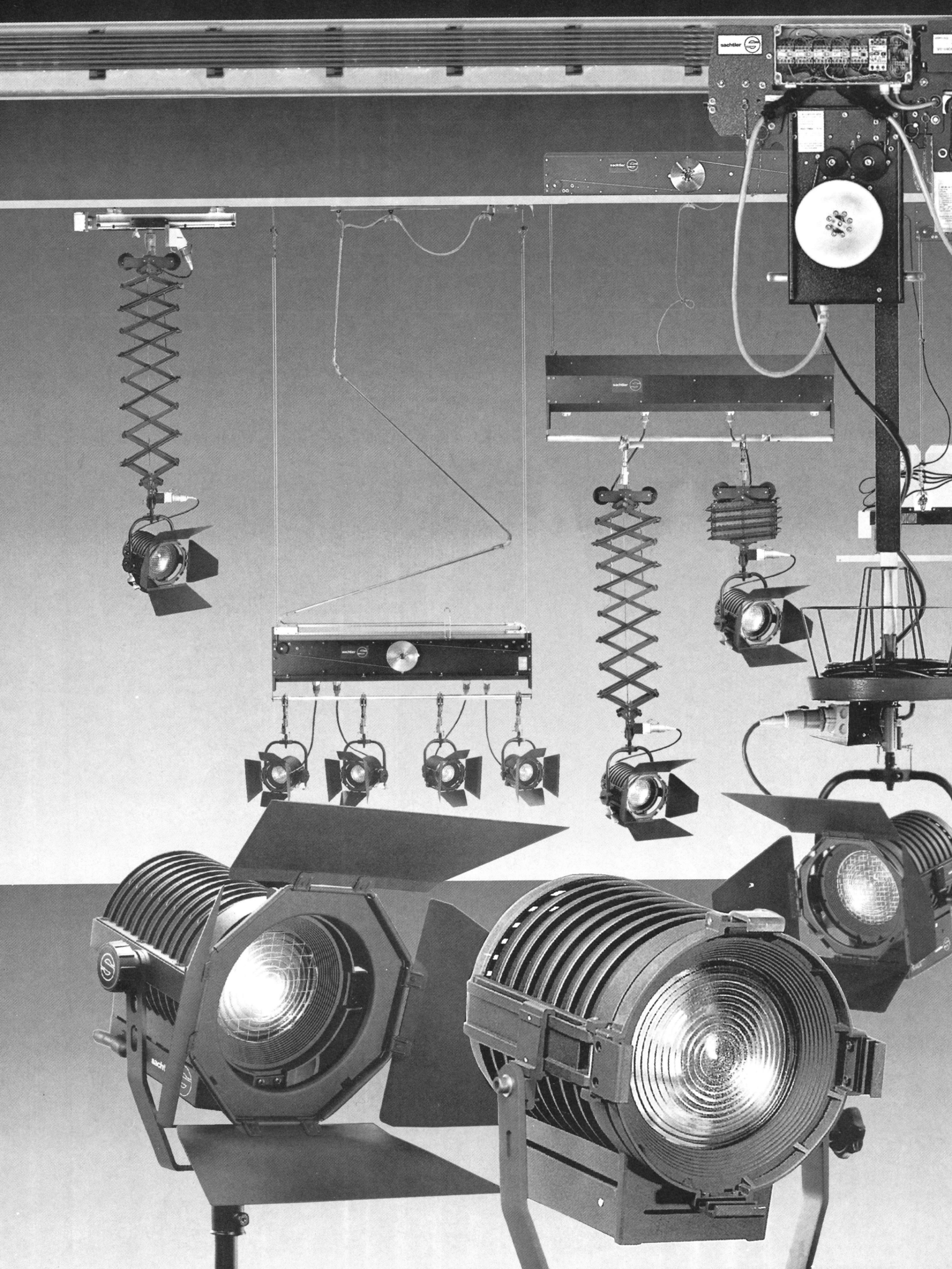


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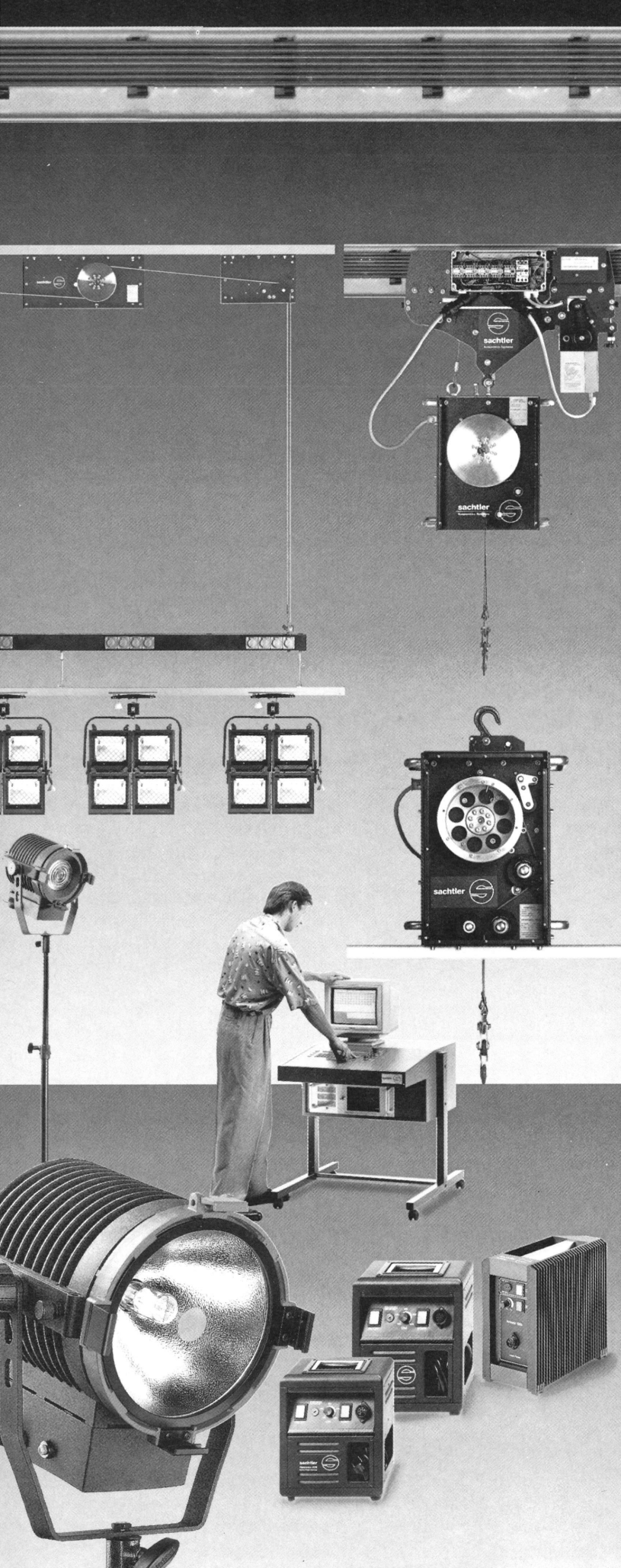
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Exploring the Future of Special Effects

Effects gurus weigh CGI's potential against time-honored techniques

by Ron Magid

In the December issue of American Cinematographer, we asked many of the brightest lights in the special effects community about the impact Jurassic Park and its computer technology had on their industry. Most of those we spoke with consigned optical compositing almost entirely to the digital realm. But the fates of other traditional techniques like stop-motion animation and mechanical makeup effects are less certain. In this final chapter, we'll examine the best and worst that CGI technology has to offer.

As the next Academy Awards approaches, the Academy of Motion Pictures is wrestling with a highly charged issue that, until the release of *Jurassic Park*, was merely a question of common sense: namely, just what constitutes an animated film? In the not-too-distant past, a film like Disney's *Beauty and the Beast* was clearly a cartoon, while *Star Wars*, for all its visual effects, was clearly a live-action film. Even in Disney's *Who Framed Roger Rabbit?*, which combined live action with traditional cel animation, it was clear who was a 'Toon and who was real. But such distinctions are blurring in the wake of the photo-realistic, computer-generated (CGI) behemoths that lumbered through the world's cinemas last summer. Whether or not the Academy decides that *Jurassic Park* is the *Song of the South* of the '90s, chances are that the distinctions between live-action filmmaking and animation will become even more blurred in the future, as computer-generated imagery becomes a growing voice in the language of film.

Some argue that seeing eventually won't be believing and CGI may be called upon to "spin" news by undetectably ma-

nipulating images at their atomic level, the pixel. But for now, the fear is that as producers grasp at *Jurassic Park*'s golden ring, many innovative effects artists will find their age-old physical techniques passé in the new digital world order. With the release of each new effects extravaganza, the murmurs start anew: 'Will I be out of a job?'

"That's the biggest problem," insists Industrial Light & Magic's Ken Ralston, who won his fourth visual effects Academy Award last year for *Death Becomes Her*, which skillfully blended live action, mechanical makeup effects and CGI. "First, this thing [CGI] pops out of nowhere, and now, a lot of people who are geniuses at what they do could be out of work if they don't want to totally change their approach and learn computer technology."

But Rhythm & Hues' Sherry McKenna, who tried to create an ill-fated computer revolution a decade ago with *The Last Starfighter*, has a different perspective. "Anytime there's a change people are afraid that jobs are going to be eliminated, and the fact is, they are," she says. "But everybody forgets the flip side: What about all the other jobs that are going to be created?"

After the release of *Terminator 2*, special effects makeup artists worried that their jobs would be first to go in the face of the looming CGI tsunami. But there was a time, not too long before, when makeup artists ruled the effects roost. In the '80s, mechanical makeup effects were almost the *raison d'être* for films like John Landis' *An American Werewolf in London*, John Carpenter's *The Thing* and Ken Russell's *Altered States*, which featured the change-o effects of makeup masters Rick Baker, Rob Bottin and the supreme Dick Smith, respectively. Audiences lined up just to see the wondrous transformations these talented artists created seemingly without a cut. But James Cameron's *The Abyss* and *Terminator 2* showed that computers could effect seamless transformations with greater conviction and ease than mechanical rubber makeup effects. And now, *Jurassic Park*'s creature technology threatens to strike not only at the heart of special make-up effects, but filmmaking as we know it.

"Digital seems to be the key word," admits Rick Baker, recipient of the first official Academy Award for Makeup for his work on *American Werewolf*, and others for *Greystoke: The Legend of Tarzan, Lord of the Apes* and *Harry and the Hendersons*. "A lot of guys who worked for me when *T2* came out said, 'It's the end of the business!' I don't see it that way. CGI's definitely going to take a chunk out of my work, no doubt about that, and I'm going to have to seriously rethink my business. But what I find interesting is that

even on *Jurassic Park*, they still needed a lot of the same technologies. Stan Winston's guys first had to sculpt the dinosaurs ILM digitized, and they needed Phil Tippett to oversee the dinosaurs' movements. In the future, I think it's going to be a matter of getting different creative people involved who can skillfully combine rubber stuff and digital technology to really do something that nobody's seen before."

Whatever the "rubber stuff" of the future will be, Dennis Muren, ASC, visual effects co-supervisor for *Jurassic Park*, insists, "What needs to be done, but which didn't quite happen on *Jurassic Park*, is we have to go into each project aware of the limitations of rubber technology and just build to those limitations and no further."

Muren, who supervised the first morph (*Willow*) and the ultimate morph (*Terminator 2*), cautions rubber monster makers: "Don't overbuild, because it's too obvious what those things can and can't do. If a full-scale mechanical *Tyrannosaurus* puppet could really walk, you'd see that technology applied to everyday problems — something would walk in and pick stalled cars up off the freeway at rush hour and walk them out of the stream of traffic! You don't see those things; they don't work. These days, I think CGI is the right tool for performance and for full shots of creatures, but when you want a creature to interact with people and the shots are short, it's better to go in closer and have your actors react to full-size creature parts."

Baker and others in the field wonder if this prejudice towards their "big rubber monster factories" will allow them to co-exist with computers as the industry turns to CGI to create creatures. "I think CGI's a great tool but you don't have to use it for everything," Baker says emphatically, taking time out from transforming Jack Nicholson into a lycanthrope for the upcoming

Wolf. "I'm sure in the future there'll be a lot of crossover stuff, and I'd like to be very much involved with it. Somebody at my studio asked recently, 'What happens when they start doing digital makeup?' and I said, 'I don't see why they would.' It would be so incredibly difficult and ridiculous."

But Scott Ross, head of James Cameron's highly touted but as yet untried Digital Domain effects house, argues that the changing face of creature effects is all a matter of economics: "Right now, it's less expensive to apply greasepaint and rubber to an actor's face than it is to manipulate their face on a frame-by-frame basis in the computer or to build a 3-D computer model. If it is eventually more cost-effective to do it in the digital realm, and I'm not sure it will be, then people will do it that way if the quality is as good, if not better. But in either case, we'll still need makeup artists. Stan

"We have a great opportunity right now to take this tool and shape it until it fits our hands."

Winston, one of the partners in Digital Domain, uses a great metaphor: 'If I want to have a script written and I have a scriptwriter who doesn't know how to type, or a typist who doesn't know how to write scripts, who would I rather use?' I think that really says it wonderfully."

But as Winston's involvement in Digital Domain suggests, the entire makeup field is shifting, however reluctantly, towards the computer. "I love my computers," Baker enthuses. "I do almost all my design work on them. I just see the computer as another tool, and a great tool, but I'm afraid that people are too quick to jump on the bandwagon. Morphing is a pretty amazing

thing, but it may not be as dramatic as doing it another way. When we were working on *American Werewolf*, I wanted to do the transformation in one shot, but John Landis said, 'No, that's not as dramatic as doing it in cuts. That way you can point out specific aspects of the transformation.' Recently, I encountered on a project where we'd traditionally use a puppet or man-in-a-suit, but the producers wanted to do it as a CG character. I argued with them because I thought they were wrong; I thought it was a poor use of a CG character but an excellent use of a puppet. But once people start using the right techniques for each effect, I think we're just going to see that much more good work. We're going to be able to do things we just can't do with rubber alone."

While makeup effects have been under siege since *T2* first reared its computer-generated chromium head, the real target of *Jurassic Park*'s techno-

logical push is the time-honored field of stop-motion puppet animation as pioneered by Willis O'Brien, the man who

gave us *The Lost World* (1925) and *King Kong* (1933). The torch was picked up by O'Brien's brilliant protégé, Ray Harryhausen, who worked at his master's side on *Mighty Joe Young* (1949) before striking out on his own, creating some 15 feature films including the classics *20 Million Miles to Earth*, *The Seventh Voyage of Sinbad*, *Jason and the Argonauts* and *Mysterious Island*, all of which employed extensive stop-motion animation effects.

Steven Spielberg so valued Harryhausen's opinion that he was virtually the only outsider to see test footage of *Jurassic Park*'s CGI behemoths. When he finally saw the finished film at a Universal Studios screening, Harryhausen's emotions were

decidedly mixed. "When you've spent your life in stop-motion animation, one is bound to have a bit of prejudice — you can't help it," he admits. "But I tried to overcome that and I certainly enjoyed it, particularly the dinosaur scenes, which were most impressive. But the emphasis these days seems to be to make things as real as possible. That's like asking a painter to go out and paint a landscape exactly as you could take a photograph of it. Then there's no interpretation."

But to many effects artists, like *Jurassic Park's* visual effects co-supervisor Mark Dippé, interpretation is one thing but when a technique becomes limiting or unintentionally apparent, it is then inappropriate. Dippé is unwilling to accept the mechanical limitations of O'Brien and Harryhausen's ball-and-socket armatures, instead extolling what he perceives as the unfettered ability of the computer to capture motion. "To me, the computer is only limited by your imagination," Dippé says, "and the direction I'm hoping to go in is performance animation. That's where you put dots on actors' bodysuits and record their movements with a computer. You then take that data and transform it into whatever you want — a bird flying, a dinosaur, any kind of performance. Even if we designed a creature that no one person could pantomime, we could record a group of actors pantomiming the entire creature simultaneously or build up the creature's performance from separately recorded actors. I had hoped to use performance animation for *Jurassic Park*, but the technology wasn't quite ready."

Phil Tippett, a stop-motion animator who was *Jurassic Park's* overall dinosaur supervisor, just shakes his head in dismay at that kind of talk. "There has been a consistent attempt since the inception of movies to take the craftspeople out of filmmaking," he says emphatically. "I don't know if it's just the result of

a lack of education that's led to this insistence on absolute realism, but now that the digital age is upon us, creating an impact equal to the invention of photography, what does that mean to our notions of 'real'? Is a photograph real anymore? Thanks to this flirtation with technology, we can make anything look real if we have the resources and the time. But my kids look at Ray Harryhausen and Willis O'Brien's movies and they're amazed — they just love them. As long as the context is imaginative and overwhelming, I can still possess a certain childlike level of abandonment. I'm not asking anyone to sell me something with all the i's dotted and t's crossed; I want to go along, I want to become part of it, rather than incredulously saying, 'Convince me, please! I need to be convinced!'"

But CGI's capacity to be utterly convincing, so ably demonstrated in *Jurassic Park*, has thrust the visual effects field into its own unique industrial revolution. Virtually the entire life of Harryhausen and the better part of Tippett's were devoted to bringing life to inanimate objects that they sculpted in clay, cast in rubber over metal armatures, and then animated a frame at a time. Now, effects created in a box are heralded as looking better to audiences than the painstaking stop-motion animation of the past. "The cleanliness of these workstations reminds me more of an accounting procedure," Tippett grimaces. "It's not like this chaos of people running around, setting up junk and communicating with armies of people. It disturbs me that this carnival aspect of moviemaking is going."

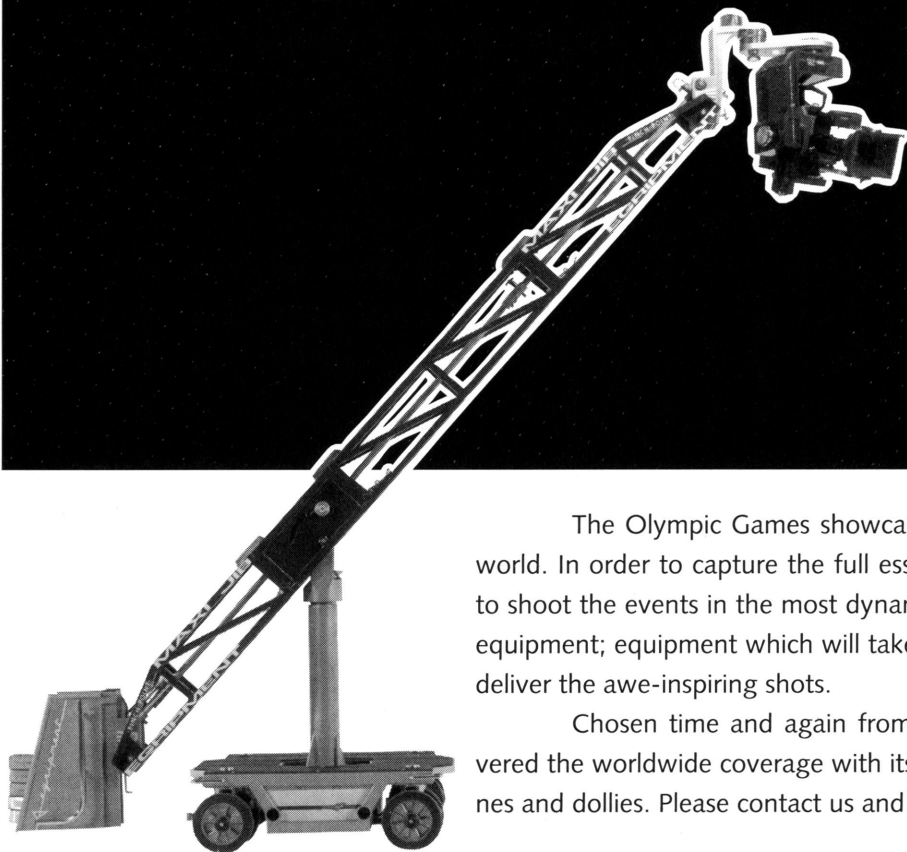
Harryhausen, who doesn't like the term "special effects" applied to his animation, is more measured in his response: "When I was starting out, I couldn't find anyone else interested in helping me aside from my father, so I was forced to learn many different

crafts — moldmaking, casting, modelling, drawing — in order to put my ideas on paper. I think that might be lost in this new development. You won't have to know that because you can hire other people to do it. There's a certain joy, I think, in accumulating knowledge, and that may be lost in pushing buttons. But I think one has to accept change. Through the ages, that's the only certainty!"

And yet, just as critics are heralding *Jurassic Park* as the harbinger of death for stop-motion animation, Tim Burton gives us *The Nightmare Before Christmas*, a film whose entire cast is composed solely of puppets. Suddenly, the success of this fantasy has shown stop motion to be its own unique artform, and brought it back from the verge of extinction. Now, with *James and the Giant Peach* slated as the next go project to use the time-honored technique, stop motion seems to be in full vigor all over again. Phil Tippett is thrilled by the success of *The Nightmare Before Christmas*, which re-legitimizes the commercial as well as artistic value of puppet animation as a stylized artform unto itself. "This film may free stop-motion animation from the blind trap of being the only technique that allowed us to do 'realistic characters,'" he says. "Now that this new computer technology has created a new standard of realism, maybe it'll free stop motion to be stop motion, and people will be able to look at it for what it is."

"I think stop motion lends a certain strangeness to fantasy films," Harryhausen agrees. "In spite of the jiggling hair and somewhat jerky motion, *King Kong* has something that a fantasy film needs, and which it loses if you make a film too realistic: an element of a dream quality. I don't know quite how O'Brien would react. I'm not at peace with the idea that the computer's going to take over, but I don't think that's true. CGI

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is another tool, like Go-Motion. If you want to use it for certain scenes, it's probably very good, but I don't think it's the be-all and end-all. There's still room for every means of entertaining the public."

That may be true for the moment, but alarmists fear that as CGI capabilities grow, other even more time-honored traditions may be threatened by the new technology. George Lucas is reportedly searching for ways to create sets and locations digitally, and it's been suggested that within ten years, actors may be replaced with synthetic performers. The result, in the most 'techno' of all possible futures, may well be movies created entirely at the ultimate workstation, which could eventually supplant filmmaking as we know it. "After *Jurassic Park*," Dennis Muren opines, "making a person is like a sidestep more than a step forward. If someone can make a synthetic person appear to be living, give it skin and weight, make it look like it's in the shot, and if it intercuts with the other stuff — well, we just did that with *Jurassic Park*."

In fact, *Jurassic Park* features a computer-generated actor portraying a human: for the final seconds of the shot in which the T-rex devours the attorney Gennaro head-first (an exact homage to Harryhausen's *The Beast from 20,000 Fathoms*), it wasn't the actor who got chomped, but a clever computer recreation. That technology also allows actors' heads to be pasted onto body doubles' physiques for nude scenes. "That way," grins Mark Dippe', "if an actor's too fat to do movie number four, we can just graft his head onto somebody else's body or recreate him digitally, and he'll be back to his slim, trim self. I think in the future actors might even be able to 'phone in' their roles. Actors have a character, a quality, something that makes them unique, so you will always need to capture their nuances; maybe we can make a

digital duplicate on the computer that looks just like them, build the equivalent telemetry suit for them to wear, record their performance while wearing the suit at home with the director in another location (similar to the satellite link used for *Jurassic Park* postproduction), and then film out the digital recreation. It

... chances are that the distinctions between live-action filmmaking and animation will become even more blurred in the future, as computer-generated imagery becomes a growing voice in the language of film.

sounds kind of nutty, but I'm sure things like that will happen."

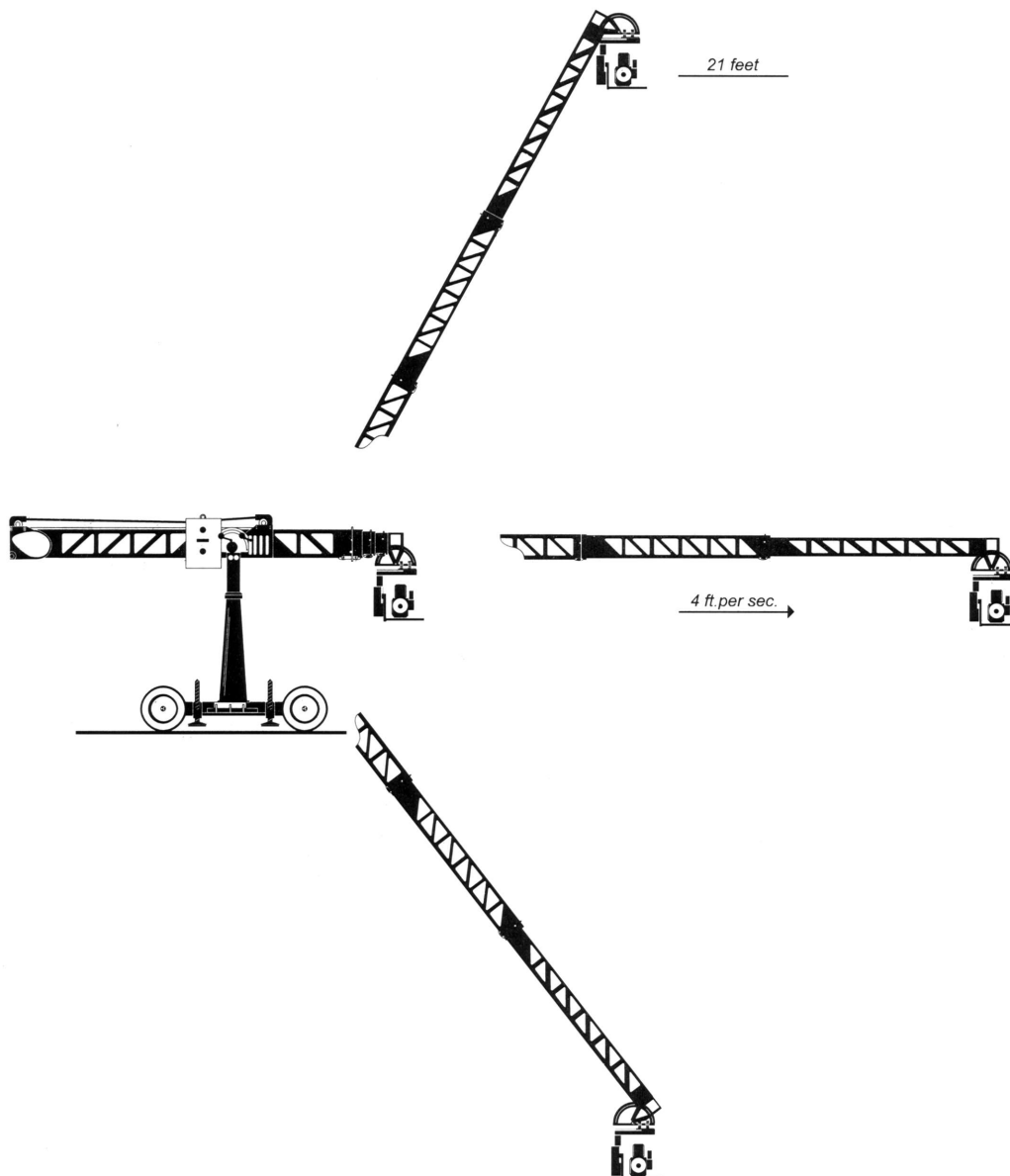
Douglas Trumbull, who brought about a special effects renaissance with his work on *2001: A Space Odyssey* and who recently completed Universal Studios' *Back to the Future* ride, has already created several synthetic actors for one of the three special-venue attractions he supervised for Las Vegas' Luxor Pyramid: "They weren't intended to look photorealistic. There's a dream sequence where multiple characters, all made out of glass, are dancing, refracting and reflecting the environment. The choreography was performed by a dancer, and a multiple video camera motion-capture technique was used to gather the data of her motions. Then that data was incorporated into the computer-generated figures. Kleiser-Walczak produced the computer graphics for The Trumbull Company at our studio.

"It's not like making Humphrey Bogart, which we can't do right now," Trumbull admits. "But it's coming. Kleiser-Walczak calls these synthetic characters Synthespians, and they've trademarked the term because they think there's such a

big future in them. You don't have to keep paying an actor over and over again and get gouged every time you make another sequel. I'm talking about making a synthetic R2D2, not Harrison Ford. I think making a synthetic actor really only lends itself to a metamorphosis from a person to a creature — Dr. Jekyll and Mr. Hyde or whatever — where the end result would be a totally CGI character. I don't think you're going to replicate the performance of a human being."

"Maybe not," points out DreamQuest's Hoyt Yeatman, "but ten years from now, the image quality of computer graphics will be spectacular and the kinematics of motion will be down to a science where we'll be able to replicate organic characters easily and completely synthetic characters will probably be playing major roles in films, like a Yoda or an E.T. At that point, there'll be a question as to whether the person behind the computer console or wearing the motion capture suit is a performer or just a technician."

Talk about replacing actors with CG images raises Boss Film's chief Richard Edlund's hackles. "It sounds kind of Orwellian," he says. "It's fun to speculate, but it's not here; it will probably be here at some point but it doesn't cook much rice today. If you try to create a character with the expressiveness of Charles Laughton or Eddie Murphy or anyone who has a real gleam in their eye — to do that in the computer would be godlike. I don't think there are many people who have the talent to create a performance of Hamlet or even *Porky's 5* on the computer; that's a real stretch at this point. You can't make the Mona Lisa unless you get Leonardo at the



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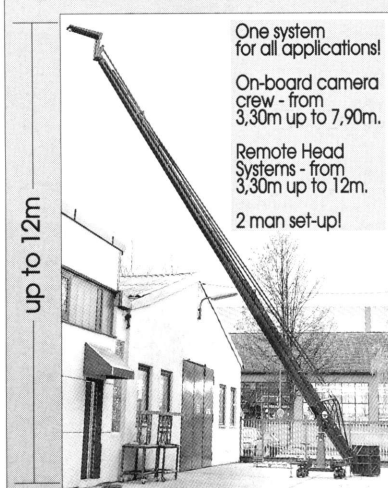
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keyboard!"

In the future, there may be many more would-be Leonardos at the console when the major effects houses find themselves competing with hackers working out of their garages. As ILM, Boss Film, Rhythm & Hues and DreamQuest perfect one CGI technique after another, their supremacy in the field may face challenges from renegade professionals with only a few computer consoles, especially as knockoffs of the software they've created become available off-the-shelf. For example, a crude version of the morph program that threw the mechanical makeup and visual effects communities into such a tizzy is currently available for \$89! How long will it be before someone working at their PC can create images comparable to those produced by the big boys?

"Yes, today for \$89 you can buy a software package that'll run on your Macintosh and allow you to do very rough morphs, or you can buy a package from ASDG that allows you to do morphing better than we were able to do at ILM in 1991," affirms Scott Ross, "but morphing is a commonplace tool nowadays. The tools and developments of 1993 are what you've seen in *Jurassic Park*. Companies like Digital Domain, ILM or Rhythm & Hues are on the edge of the wave and that wave doesn't stand still, so as time moves forward we'll still be on the edge creating new techniques, tools and software applications. The trail that's left in our wake is what the others will have access to. And there may be wonderfully creative people with great technical resources who might even be able to produce an image or two in a one- or two-console environment that are not only up to snuff with the current state of the art, but maybe even better. What they won't be able to do is produce 150 of them."

"If there are geniuses out there, I think they're going to get tired of working in their garage,"

grins Richard Edlund, "and we'll hire them! I see it as becoming more and more a talent-driven business. I envision that, at some point not too far away, we'll be able to import some obscure piece of software from Nigeria because some guy has hacked it there. We'll find out about it and combine it with something else through a translation program we get from Greenland, and then add some software we get from some guy in Australia! When everyone's all fiberoptic or phoneline-networked, we'll be able to put all kinds of obscure software and images together. It's pretty mindboggling. It's an interesting and formidable future, but I don't see [us] being obviated."

Although software may become readily available and many more individuals will have access to it, ILM's Dennis Muren is confident they'll find CGI more troublesome than they bargained for. "There's going to be a shakeout as people find that this tool's too hard for them to learn," he predicts. "People have spent a lot of money on equipment, they've bought the same computers ILM has and even the same software, and they've even read the manuals three times. But we wrote hundreds of pieces of custom code for Softimage to make the stuff in *Jurassic Park* work, and how many people really know how to animate, anyway? It's a lot harder than it looks."

But there's at least one effects wizard who finds it exciting that this once-mystical technology will soon be falling into the hands of average Joes. "I think that's fabulous," crows Doug Trumbull. "It means that someone with a small, relatively inexpensive computer console, working in his or her home, can generate just as good a special effect as a \$30-million-capitalized studio. That's dramatically changing the competitive bidding process in L.A., I can tell you. But it really is empowering individuals as artists to contrib-

ute logos, individual shots or commercials at relatively modest cost. This won't render ILM or Boss obsolete, not at all. They're the guys who are going to continue to be at the forefront in this business, the big players for the big projects, but I think you'll continue to see a metamorphosis of what their business consists of."

And what will emerge from the chrysalis when that metamorphosis is complete? Probably the most exciting, imaginative, spectacular and undreamed-of images the world has ever seen. There were a number of eloquent thoughts about the future offered by each of the talented people quoted in this article, but the most surprising perspective belonged to Pete Kozachik, cinematographer and visual effects supervisor for arguably the most 'retro' of this year's effects films, *The Nightmare Before Christmas*. "In 1977, I remember reading in *American Cinematographer* about this new effects film where they let computers move the models for them, and I thought, 'What a bunch of wimps,'" he smiles. "Of course, the movie was *Star Wars*! Motion control changed everything, just as CGI is changing things now. The part I'll regret most about the CGI revolution is the loss of working in the physical world as much as I do now. But I think there's a whole industry full of people my age who have mastered certain technologies that were handed down to us from another generation, with the possible exception of motion control. We got pretty good at it and made it our own, but I feel like we're genuinely fortunate as a group to be at a point in time where digital technology is so new that it hasn't quite formed. It hasn't really been given a really strong defining methodology like Disney animation, where they have their punch holes just so. We have a great opportunity right now to take this tool and shape it until it fits our hands." ❀



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The eternal question of fate's hand in an individual's life looms large in *Heaven and Earth*, adding a spiritual dimension to director Oliver Stone's third film about the Vietnam War and its profound impact on the collective psyches of the American and Vietnamese societies.

The trilogy began in 1986 with the painfully intense *Platoon*, in which Stone presented the Vietnam War through the eyes of a squad of alternately naive and weary American soldiers. The film's visceral perspective brought audiences into eye-to-eye contact with the human costs of war.

In *Born on the Fourth of July*, Stone examined the consequences of the war on American citizen Ron Kovic, who had entered the war as a patriot and a true believer in his government. By the movie's end, Kovic was a disenfranchised paraplegic who had completely lost faith in the

establishment he'd volunteered to fight for. Both films left audiences with vivid, often horrific images ingrained in their memories.

Heaven and Earth looks at the war from the fresh perspective of a Vietnamese woman with Buddhist beliefs who is trapped between opposing political forces in her own country. The film is based on two books written by the central character, Le Ly Hayslip — *When Heaven and Earth Changed Places* with Jay Wurts, and *Child of War, Woman of Peace* with James Hayslip — which Stone adapted into a single screenplay. Once again he assigned cinematography duties to his longtime collaborator, Robert Richardson, ASC.

Richardson became interested in photography at the University of Vermont after seeing films made by Swedish director Ingmar Bergman and Sven Nykvist, ASC. He continued his

education at the Rhode Island School of Design and the American Film Institute advanced studies program.

Richardson occasionally performed second-unit and insert work after graduation, but he found the best opportunities to ply his craft in the non-fiction genre. He caught Stone's attention with his work on a 1985 documentary about the civil war in El Salvador. Richardson's soundman, Ramon Menendez, subsequently became a technical advisor to Stone when the director was preparing to film *Salvador*, and Richardson wound up photographing the picture.

Midway through the shooting of *Salvador*, Stone asked

Directed by Oliver Stone
 Produced by Oliver Stone,
 Arnon Milchan, Robert Kline
 and A. Kitman Ho
 Director of photography,
 Robert Richardson, ASC

Mining the Spiritual Layers of *Heaven and Earth*

Stone and Richardson present another view of Vietnam.

by Bob Fisher

Richardson to film *Platoon*. "I was flattered," Richardson recalls. "He had been carrying this story around in his head for ten years, ever since he had returned from Vietnam. I knew it was a very personal and important film for him."

Richardson immersed himself in the look and feel of Vietnam by watching endless hours of documentaries and news footage, and by reading every book available on the topic. Stone originally wanted to film *Platoon* in a docu-feature style similar to *Salvador*, but Richardson suggested integrating psychological realism into the film's natural physicality, since the director wanted the audience to have a palpable feeling of claustrophobia.

While *Born on the Fourth of July* centered on the character of Ron Kovic, both Stone and Richardson saw his heart-wrenching story in more universal terms. They decided to use the anamorphic format for the first time to imbue the film with a sweeping feel. "This was more than a story about an individual," Richardson says. "It was about a generation of Americans affected by the war. The anamorphic format allowed us to pull back and spread the focus from a central figure."

Heaven and Earth differs from the first two films of the trilogy in that the story doesn't come from an idea that Stone has nurtured for years. The seed of the film's concept was planted just a year or two before the film was made.

"Someone brought Oliver the first book by Le Ly Hayslip," Richardson says. "He was intrigued by the concept of telling the story from the Vietnamese perspective, which was probably always in his mind. But this story also allowed him to step into two different venues he wanted to explore. It shows the audience the story from a woman's point of view, which he has never done before, and it also deals with the spiritual world of Buddhist sensibilities."

"Fragments of the spiritual world were explored in *The Doors*, where we dealt with an Indian shaman," he continues. "But Le Ly Hayslip's spiritual perspective is the thread which holds the underlying fabric of *Heaven and Earth* together. It's always there just under the surface. The spiritual theme of the story concerns a debt to a cosmic god who brought Le Ly Hayslip onto this planet. It's a debt you pay as

you go through life."

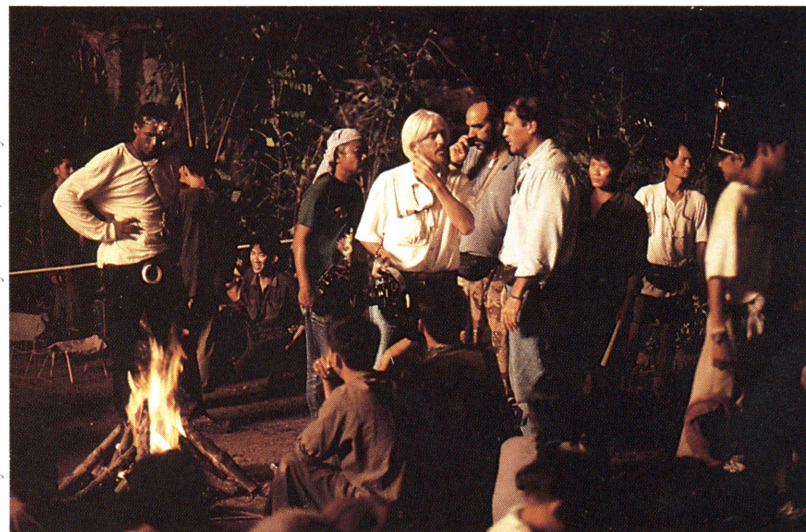
When the story begins, Hayslip (played by Hiep Thi Le) lives in a small village in central Vietnam. Spanning decades, the narrative covers both the French and American incursions into southeast Asia, and details how a Vietnamese woman who marries an American (Tommy Lee Jones) is ultimately received back into her family.

"It's about physical survival from a Western perspective," comments Richardson. "The film is almost Darwinian in the way that it deals with survival."

But Richardson found an entirely different dimension to *Heaven and Earth*, one requiring a different mindset. "Being Christian, I had a very difficult time visualizing the world through the mind of a Buddhist," he admits. "It was both a personal and professional struggle. Furthermore, how do you visually depict a

Opposite: Richardson aimed to translate the changing spiritual sensibilities of Le Ly Hayslip (Hiep Thi Le) through light and color. This page: Director Stone and Richardson (center) confer on location. "I've become very spoiled by Oliver because of the material I get from him," notes the cinematographer.

Photos by Roland Neveu and Sidney Baldwin, courtesy of Warner Bros.





Top: Despite Stone's Steadicam fetish, Richardson made selective use of camera movement throughout the film. **Right:** Richardson takes to the eyepiece to view this moody scene of Hayslip (Thi Le) emerging from a fog-filled paddy.

Vietnamese woman moving through a spiritual existence for a Western audience? You can photograph the physical traumas she deals with, but how do you translate her spiritual sensibilities?"

In preparing for the film, Richardson spoke with Hayslip and read Buddhist teachings and the works of writers in Vietnam, particularly those who were active during the war, because he wanted a sense of the particular time and place. Richardson had read Hayslip's first book, *When Heaven and Earth Changed Places*, a couple of years earlier. He read the original manuscript of her second book, *Child of War, Woman of Peace*, during preparations for the film.

Richardson also began exploring ways of stamping a visual color identity on Le Ly's spiritual experiences to define her relationship with her environment. "All of a sudden I slid into thinking about theosophy," he recalls. "Rudolph Steiner and others involved in theosophy had some interesting ideas about auras, and the representative meanings of various colors. Steiner was very specific in articulating particular definitions of the qual-



ity and illumination of light and color in particular auras, as framed in various stages of spiritual enlightenment."

Richardson found that it was extremely difficult to articulate that concept on film. "In the corporeal world the qualities of light and color are very specific," he explains. "Grass is a particular shade of green and the sky is a particular shade of blue. I have no control over this environment. For Steiner, a man's aura physically demonstrates how far they know how to live not for them-

selves but for the eternal, an easy enough concept until you try to translate it. For example, green, for Steiner — and this is an oversimplification — can signify obtuseness and indifference as well as inner awareness. It's confusing, but for Steiner it all relates to the development of spiritual enlightenment.

"Well, with fields of green rice surrounding a character, what is it that we are saying?" he continues. "That Le Ly is a part of nature, physically in harmony, or that she is obtuse and indifferent, or that in some way she is enlightened? Film is concrete, while color is physical, psychological and spiritual. In any case, once I started on this journey, it conceptually allowed me to step into Le Ly's life. From a theosophical 'point of view,' I ar-

tificially attached myself to her Eastern 'point of view.'

"Say blue or magenta is the highest ranking color and a muddy red-brown is at the bottom of the order, and you want to articulate that progressively," he continues. "We used colors on walls, in clothing, and in the quality of light coming through windows. We tried to tap into what we saw as the highlights of her spiritual awareness, when she was a child, as she grew into her teens, and then in her 30s."

Richardson met with

some frustration in his attempts to work with the concept. "Some calculations I made about how you record and perceive color to reflect a spiritual aura didn't work the way I thought they would. It was traumatic. We tried to record key spiritual moments, but it was very difficult or impossible in the real world. If we were shooting in a paddy we were infused with green, which as I said represents an inner light for awareness. But in that scene we were trying to depict a selfishness to her actions. It was impossible without altering the terrain."

However, the cinematographer did not completely fail to translate his desired nuances onto the screen: "It's not a failure that is evident to the audience," Richardson says. "They see a softer and more lavish look earlier in her life, compared to the harsher and more fragmented images later on."

In scouting trips to central and north Vietnam, Stone and Richardson were retracing familiar steps, having previously traveled from Hanoi to Saigon and into Cambodia after completing *Born on the Fourth of July*. Richardson also attached himself to a television crew that was doing a story about Hayslip's life, and traveled with them throughout Vietnam to shoot landscapes for establishing scenes.

Stone and Richardson also scouted locations in Phuket and Bangkok, in Thailand. The dramatic setting of Phuket was chosen to depict the central highlands of Vietnam, and more than two-thirds of the movie ended up being shot in Thailand.

The importance of the Phuket's vast landscapes in *Heaven and Earth* helped make the anamorphic format an obvious choice for the filmmakers. "We wanted a wider frame which allowed the environment to unfold," Richardson explains. "There was a short mountain range on top of a long, verdant, green rice field. We wanted the

characters to seem small inside this frame. We desired to express the dominance of nature.

"In truth, Le Ly comes from an area where the landscape is flat with very few mountains, and just a few strong peaks," he reveals. "We chose an area with more contours, a strong physical landscape with a small mountain range, which dramatically contrasted and emphasized the rice paddies."

In contrast, the tremendous smog in Bangkok always diffused the location's spectral quality of light. "It was like shooting in Los Angeles on a very bad day," remarks Richardson.

Production designer Victor Kempster built the village representing where Le Ly was raised, and also planted all of the visible rice fields. "He had to physically alter the shape of the terrain," Richardson remarks, "because the Thais and Vietnamese have different ways of defining rice paddies. Other than the village, we used actual interior and exterior locations. However, even when we were shooting interiors in the village Victor constructed, we lit it like a practical location. Oliver feels that method

works better for the actors — it's more natural. We had some wild walls on a few sets, but rarely used them."

The locations and even the timing of production imposed conditions which affected the outcome of the film. "We shot the village sequences at the end of the monsoon season," he recalls. "The dry season was approaching. A large section of the day ended with very soft, grey light, so we got soft highlights. You could see great distances on the horizon with dark grey and black clouds moving closer. It was stunning.

"In many ways, we were taken down paths which we hadn't planned," Richardson says. "To tell the truth, I was unaware of some of the physical manifestations until we saw dailies, and that was eight to fifteen days after we shot the scenes. We saw most of the dailies in video format, because Oliver was editing this with a Lightworks system."

Richardson usually only saw film if he thought there might be a problem like matching colors, which is more difficult to see on video dailies. The lab was

Richardson's daring and distinctive lighting style augments the terror of this confrontation between Steve Butler (Tommy Lee Jones) and Le Ly.





Richardson attempted to tap into the highlights of Hayslip's spiritual awareness through colors on the set, in clothing and in the quality of light.

Technicolor in Los Angeles; however, because of the time difference, most of the contact with dailies supervisor John Bickford was made by Bill Brown, the postproduction supervisor.

Heaven and Earth was filmed with Panaflex cameras and E-series anamorphic lenses, primarily with the 100T Eastman EXR 5248 film. Richardson mostly used the 200T EXR 5293 film for interior and night exteriors. Occasionally, in dimly-lit night scenes, Richardson used the 500T 5296 film. His overriding preference was the 100-speed, finer-grain film.

"There were exterior scenes that were three-and-a-half pages long," he says. "I knew we would start early in the morning and finish late in the afternoon. The 100-speed film gave me the latitude to shoot the whole scene. Even if I had to pull the 85 filter off the lens at the end of the day (to get an extra two-thirds of a stop), we could finish the scene late in the afternoon or at twilight."

Richardson explains that he chose the slower anamorphic lenses because he "hadn't tested the Primo anamorphic lenses,

and they were hard to get," Richardson says. "I knew that a Primo 11:1 zoom lens was coming out, but I couldn't be certain if it would be available when we needed it, or how the colors would match with the other Primo lenses."

Another reason for choosing the slower lenses was his director's love of the Steadicam. "I knew we would end up using C-or E-series Panavision lenses for those shots," he explains. "I know how the anamorphic E-series lenses will reproduce black, and that affects the decision you make on diffusion. I didn't want to experiment with new lenses halfway around the world."

Jimmy Muro provided the Steadicam shooting and also shot second camera, while Phil Pfeiffer directed and shot second-unit. "We used a Steadicam from beginning to end, all the time we were shooting in Thailand, but we were selective in the use of camera movement," Richardson notes.

Camera moves are geared to the characters, Richardson explains. In the early stages of the film, the camera either follows

characters or flows with them as they move within the frame. As the film progresses and there is more interaction between groups such as the Viet Cong, the Republican (South Vietnamese) army, the Americans, or even the French, the camera action becomes more aggressive in depicting the interactions. When Le Ly becomes a house maid the camera moves in her scenes are gentle, and thus more reflective of her position.

The natural, unstudied performance of debuting actress Thi Le may well add to the film's power. "She was very receptive," says Richardson. "She knew instinctively where to look and how to move. She caught on very quickly. She's like a flower who blooms on film. There is a level of innocence to her which is very powerful in terms of reflecting the levels of love and pain Le Ly Hayslip went through in the part of her life depicted in this film."

When it served a dramatic purpose, Richardson altered the frame rate of the film to seemingly stretch time. In one sequence, Le Ly's father is captured and tortured, and then beaten by soldiers. Stone and Richardson shot the scene in black & white at a reduced frame rate of 16fps to visually emphasize the character's agony.

"We tried to be very subjective about our interpretation of events," Richardson says, pointing to another scene in which a helicopter brings the first American troops to Le Ly's village. "She's working in the rice paddies when she hears this sound. You don't see the chopper, and you don't know exactly what's making the noise. It could be a bird flapping its wings. The sound is distorted and stretched."

The scene occurs in rain, and water was hosed onto a glass barrier in front of the lens. Richardson shot between 24 and 96fps, so that the images oscillated and provided a visual match for the distorted vibrations

of sound. "It was never very clear to her what she was seeing," he explains. "She had never seen a helicopter before, she had never even heard one. All of a sudden this thing lands, and a man in a green outfit with blond hair steps out."

Like nearly all of Stone's films, *Heaven and Earth* intends to emotionally pull the audience right into the lives of its characters. "I don't think the audience will be able to sit back and watch this film dispassionately," Richardson states. "It forces an emotional reaction."

When he viewed a first cut of the film for timing, Richardson was surprised by its similarity in look and feel to *Born on the Fourth of July*. "It's really not about war in the same way," he qualifies, adding that "the battle sequences are much smaller in scale. But in terms of color, lighting, filtration and cutting (by David Brenner), it reminded me a lot of *Born on the Fourth of July*. It was strange, because I didn't think of it that way while we were shooting. When I left the screening room, I was asking myself, 'How far have you gone?' But maybe it's good. Maybe there's a consistency."

Part of Richardson's reaction may be attributed to the fact that both films were framed in anamorphic. "It seemed like there is a similarity in camera angles, and in the use of close-ups and wide shots," he says. "Perhaps the use of a very subjective camera is also similar."

Just days after *Heaven and Earth* concluded shooting, the ever-prolific Stone and Richardson flew to New Mexico to scout locations for the director's next film, *Natural Born Killers*. "It is a distinctly different type of film," notes Richardson. "In fact, they don't exist on the same plane. *Natural Born Killers* is much more violent and catastrophic, a very difficult film for me emotionally. It's about demons and that shadow area of life that Jung talks about. Visu-

ally it was very random, like splashing color on a painting and not knowing what color you are going to use until you throw it on the canvas. It was improvisational. Oliver and I would talk, and one of us would say, 'Let's try this, or do that. Wait — let's try something else.' We used different textures, frame rates and formats. We shot 16mm black & white, Super 8, High 8 video and of course, 35mm color. A very instinctive experience.

"It's a story Oliver wanted to do two years ago," Richardson says. "For me, the most difficult part was the transition from *Heaven and Earth*, which had a strong spiritual core, to a film that was so randomly violent."

How does Richardson view his personal evolution as a cinematographer while working with Stone? "I've become very spoiled by Oliver because of the material I get from him," Richardson says. "I have very high expectations for the subject matter that I shoot. He also brings a lot of passion to his work."

While Richardson's name is most frequently linked with Stone, his other credits include *Eight Men Out* and *City of Hope* with John Sayles, and *A Few Good Men* with Rob Reiner. In nine years, he has collected an Academy Award for *JFK*, Oscar nominations for *Platoon* and *Born on the Fourth of July*, ASC Award nominations for *Platoon*, *Fourth of July*, *JFK* and *A Few Good Men*, and Independent Spirit Award nominations for *Salvador*, *Platoon* and *Talk Radio*.

"Oliver calls it a trilogy," says the cinematographer of the three Vietnam movies he has filmed for Stone, "but I think it is more accurate to say it's a continuation of a story. I don't think he will stop there. He has other dreams. The final chapter hasn't been written."



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A Lifetime of Achievement: Conrad Hall, ASC

by Bob Fisher and Stephen Pizzello

The ASC Lifetime Achievement Award was initiated in 1988 to recognize cinematographers who have compiled significant bodies of work which have made a lasting impression. Previous winners were George Folsey, Joe Biroc, Stanley Cortez, Charles Lang, Philip Lathrop, and Haskell Wexler. The 1994 winner is Conrad Hall, ASC.

Conrad Hall, ASC was stunned when he learned that he had been chosen to receive the 1994 ASC Lifetime Achievement Award. To cinema aficionados, however, the choice is perfectly logical. Hall has spent his entire career doggedly pursuing what he terms "the happy accident, the magic moment," and his cinematic divining rod has produced some of film history's most memorable images. Along the way, Hall's uncompromising commitment to artistry — and willingness to take risks in pursuit of that artistry — has earned him the respect and admiration of his peers, who occupy filmmaking's penthouse echelon.

"It took a while for me to grasp that my colleagues believe I have made an impact on the history of cinema," he says of his Lifetime Achievement honor. "Billions of people have seen and been influenced by movies in the short history of this industry. My peers say I have made a difference. That means more to me than winning an Oscar."

Still, he says, the honor somehow feels premature. How could he receive the ultimate recognition when his body of work is still evolving? "I'm too young," the 67-year-old cinematographer insists. "I hope I'm still shooting when I'm 80."

While Hall maintains that his best days are still ahead

of him, he has already accumulated an impressive and influential body of work. He won an Oscar in 1969 for *Butch Cassidy and the Sundance Kid*, and earned other nominations for *Morituri*, *The Professionals*, *In Cold Blood*, *The Day of the Locust* and *Tequila Sunrise*. The latter film also garnered Hall the 1988 ASC Outstanding Achievement Award for Cinematography. The cinematographer's other credits include such highly regarded pictures as *Cool Hand Luke*, *Harper*, *Electra*, *Glide in Blue*, *Fat City*, *Marathon Man* and *Black Widow*.

Hall was in the first wave of a new generation of cinematographers who broke into the industry during the 1950s and '60s. Given his background, however, cinematography was an unlikely vocation.

His father was James Norman Hall, an ace pilot and captain in the Lafayette Escadrille, which fought for France during World War I. After the war, the elder Hall and fellow volunteer Charles Nordhoff were asked to write a history of the unit. Searching for a quiet place where they could concentrate, the pair found solitude — and a new world — in Tahiti. Instead of writing about the Lafayette Escadrille, Hall and Nordhoff completed a novel they called *Mutiny on the Bounty*.

James Norman Hall settled in Tahiti, where he wed the descendant of a marriage between a Tahitian lady and an American-English sea captain. The couple's son, Conrad, grew up on the island in a cloistered literary environment. He never had a camera or took a picture, and going to see movies was an exotic concept. During his teens, Hall was sent to an exclusive prep school in Santa

Barbara. Afterwards, he enrolled at USC with instructions from his father to find a career. But how do you measure up to a father who fought aerial duels with the legendary Red Baron and went on to write a classic novel?

Hall enrolled in the journalism program, but it was a short-lived experience. "My first semester, I got a D in creative writing," he recalls. He decided to choose another field, leafing through the As and Bs in the curriculum catalog before settling on cinema. His decision to enroll in the cinema program wasn't a frivolous one, however; movies were a relatively new art form, and Hall thought it could be interesting to get in on the ground floor.

His timing couldn't have been better. USC's cinema school was headed by Slavko Vorkapitch, a Yugoslavian writer who had migrated to Hollywood in 1922. Vorkapitch had done some screenwriting, but mostly was known for the power of his visual montages. He lent his talents to several features, including *I Take This Woman*, *Crime Without Passion* and *Shopworn Angel*.

Vorkapitch had an unforgiving disdain for "photoplays," which was how he characterized most Hollywood films. "He was like a surrogate father," says Hall. "He had the spirit and soul of an artist. He taught me that filmmaking was a new visual language. He taught the principles, and left the rest up to us."

The professor found a disciple in Hall. "I can still recall the thrill of shooting my first film," Hall recalls. "It was a scene of a car coming to a stop sign and then driving off. Our allotment for the semester was only 100 feet of 16mm black & white film. I

knew exactly how I wanted it to play, but you are never sure it will work until you watch the projected images reflect off the screen. When I saw the film for the first time, I became hooked on the power of visual imagery and its effectiveness in telling a story."

Filmmakers visited the students regularly. On one such occasion, John Huston showed them dailies of *The Red Badge of Courage*. Orson Welles was another influence on Hall, as were many screenwriters Vorkapitch recruited to talk with the students.

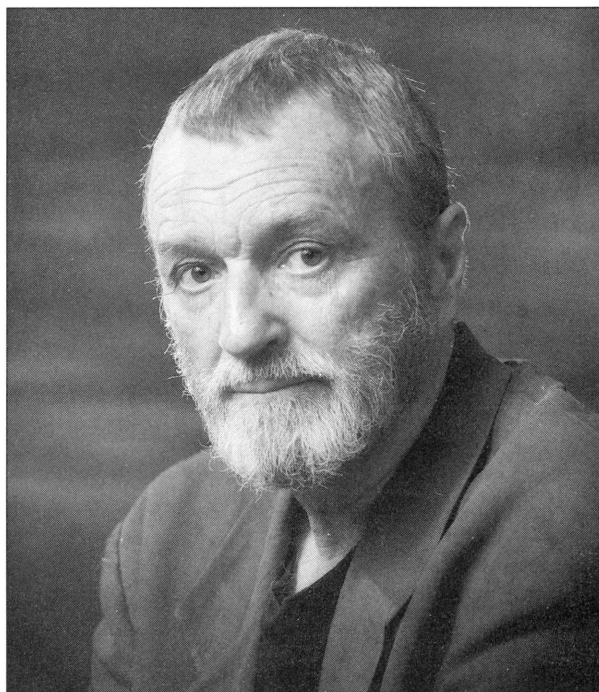
After graduation, Hall discovered that a cinema school degree didn't unlock any doors in Hollywood. He confronted the classic "Catch 22" situation: you couldn't work on a camera crew unless you were on the International Photographers Guild roster, but you couldn't get on the roster without experience. Given these realities, the odds against success were nearly insurmountable.

Hall was determined to beat those odds. He and two classmates, Marvin Weinstein and Jack Couffer, organized Canyon Films. The trio produced documentaries, commercials and industrial films, but there were long periods when they mainly dreamed about the future. Hall shot commercials and industrial films, and did some pickup shots for features.

Canyon Films eventually purchased a short story entitled *My Brother Down There* with the idea of turning it into a feature film. The three partners collabo-

rated on the script. Then they put slips of paper into a hat. One said "producer," another "director," and the third read "cameraman."

Hall pulled camera duty, and the luck of the draw helped him get into the International Photographers Guild. "In order to appease the union, we made a deal to hire a Guild cameraman," Hall says. "I shot the picture, but the Guild cameraman got the screen credit. I was given a credit as visual consultant." The film was released by United Artists under the title *Running Target*.



Afterwards, the partners went their separate ways, and Hall was allowed to join the Guild.

Once in the Guild, Hall worked as an assistant cameraman with Burnie Guffey, ASC, Ernie Haller, ASC, Hal Mohr, ASC and Ted McCord, ASC. After a year with McCord, Hall was upgraded to operator. The young operator was working on a TV series called *Stoney Burke* when McCord got sick; Hall was asked to take over. The next year, he filmed *The Outer Limits*.

In 1964, Hall shot his first union feature, *The Wild Seed*. The black & white production was filmed in 24 days on a \$286,000 budget. Recalling the harried

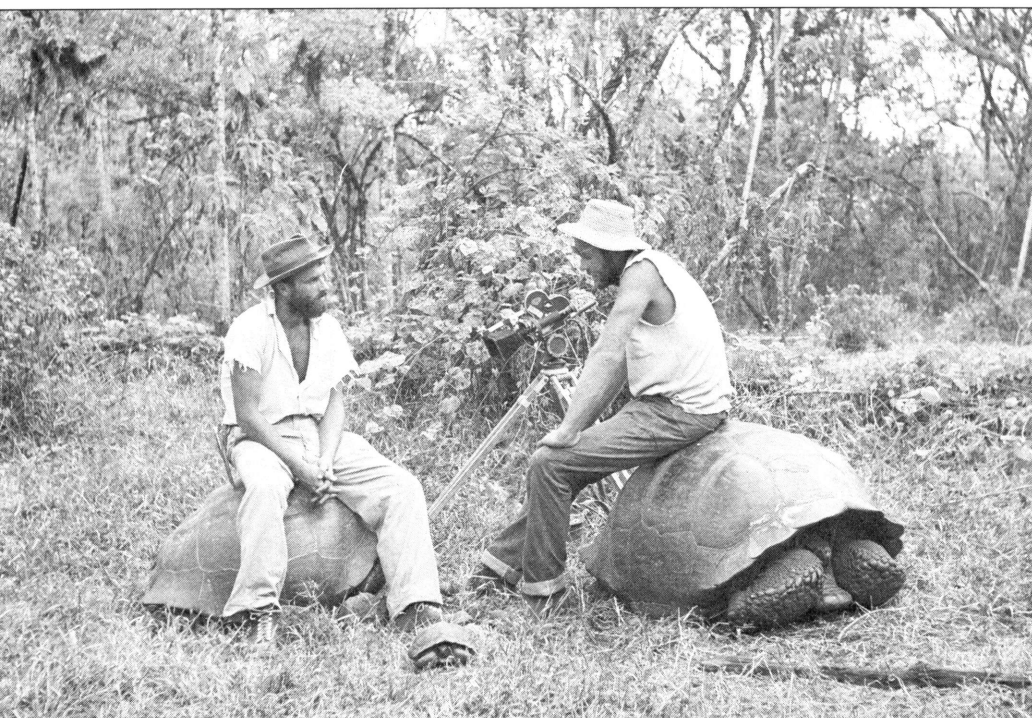
pace of the production, Hall cracks, "In those days it seemed like plenty of time and money."

Veteran producer Tom Shaw, who worked with Hall on *The Wild Seed* and many subsequent outings, says that Hall's quick thinking and on-the-spot improvisations were a wonder to behold: "It was one of the best damn jobs I ever saw anyone do in my life. We made that film in 24 days, but it seemed like 24 minutes! And it turned out so well, I'd put it up against almost anything, even though we made it for about 20 cents. Connie did a great job with very little; at one point, we were shooting the interior of a boxcar, and both generators went out. He lit the whole thing with the reflectors, and it was beautiful. He's very inventive and imaginative. I never knew Connie before that movie, but I was so impressed by what he accomplished with no resources that I got him for the next film I worked on, *The Professionals*."

Later in 1965, Hall earned his first Oscar nomination for *Morituri*. In 1966, he shot *Incubus*, *Harper* and then *The Professionals*. *Harper* was his first color film, but he remembers shooting it as if it were black & white. "I was much more concerned with the importance of camera movement," he says.

The Professionals was his first film with director Richard Brooks, and earned the cinematographer his second Oscar nomination. At the time *The Professionals* was being made, the industry was benefitting from an amazing influx of talent, as evidenced by the fact that Hall's crew on the film included future photographic wizards William Fraker and Jordan Cronenweth.

Very early in preparation, Brooks cautioned Hall that he was going to be tempted to help him direct. He then pointed out, in a style befitting the film's Western milieu, that there was only room for one sheriff in town. Hall, a plain talker himself, respected the filmmaker's frank-



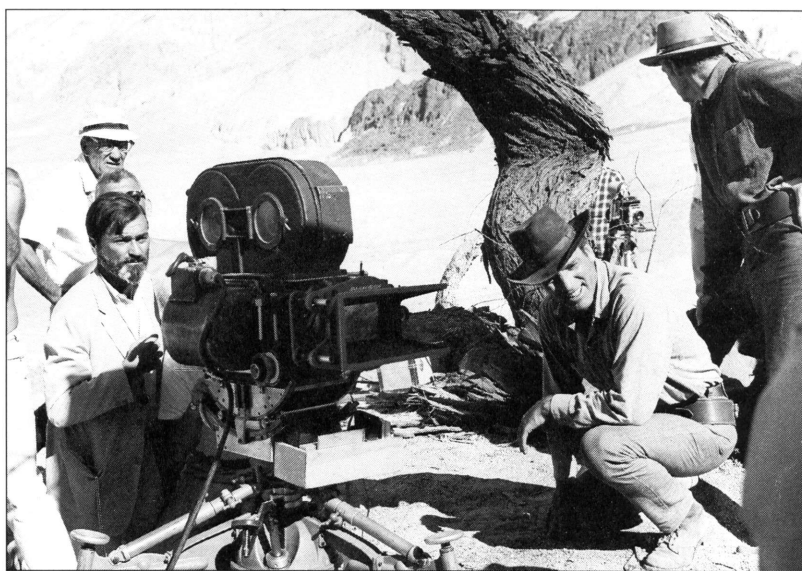
Above: Since production of Disney's *Islands of the Sea* (1950) has obviously slowed to a turtle's pace, Hall (left) and close associate Jack Couffer take five to discuss their next move. The film was shot on the Galapagos Islands. **Right:** Hall surveys the scene during filming of *The Professionals*, with Burt Lancaster (kneeling) and Robert Ryan (at far right). Behind Hall are director Richard Brooks (partially obscured) and gaffer Harry Sumbly (photos courtesy of Conrad Hall, ASC).

ness, and the pair soon developed a fertile artistic rapport.

The effectiveness of the Brooks/Hall teaming was reinforced in 1967, when Hall collected an Oscar nomination for the third consecutive year for *In Cold Blood*. In seeking to imbue the film with an intense, documentary feel, Brooks opted to shoot on the actual locations of the true story, which recounted the brutal slaying of an upstanding Kansas family.

Hall and Brooks originally wanted to shoot the picture in a 1.85:1 hard-matte format to ensure that it would be projected properly. "I didn't want too much or too little headroom," Hall notes. "I wanted people to see things just the way I wanted to show them." When Columbia Studios objected, however, the duo opted to shoot in the 2.35:1 anamorphic format to preserve the precision at the top and bottom of the frame. Hall reasoned that if the edges of his frame were cut off during projection, the compositions would approximate the 1.85:1 ratio he had originally desired.

While the film is filled with stunning images, perhaps the most unforgettable sequence



occurs when Robert Blake's killer roams through the family's dark house with a flashlight. After lighting to provide a certain amount of basic visibility for the scene, Hall lent the sequence a chilling ambience of dread by adroitly exploiting the ever-changing light levels produced by the flashlight's bouncing beam.

That same year, Hall added *Cool Hand Luke* and *Divorce American Style* to his body of work. In 1968, he shot the aptly titled *Hell in the Pacific*: the pro-

duction was a logistical miracle or a nightmare, depending on your perspective. "We spent eight months shooting on a remote island," Hall says. "We took a boat for 20 miles every day, switched to an amphibious duck, and finally waded in, carrying the equipment over a reef. After all that work, I think they used stock footage in the final scene."

Hall earned the Oscar for *Butch Cassidy* in 1969, filming *Willy Boy is Here* and Brooks' *The Happy Ending* in the same year. On both *Butch Cassidy* and *Willy Boy*, Hall experimented with overexposing the negative and printing it back down in order to mute strong primary colors. Although he also tried using fog filters and other lab techniques to accomplish this end, he found overexposing to be the most ef-

fective method of "destroying" the color and sharpness of the film's images so that they would more closely resemble the look of real life.

In 1972, Hall collaborated with John Huston on *Fat City*, a raw exploration of life in the seamy world of boxing. Before the filmmakers began planning the photographic approach, Huston called Hall and production designer Dick Sylbert into his motel room to solicit their opinions on the film's subject matter. The trio concluded that

the film was about life going down the drain before you could put the plug in.

While contemplating the look of the film, Hall set up a camper/truck in the Skid Row areas of Stockton, California, where the homeless denizen were barely surviving their subsistence existence. He cruised the streets looking for examples of life "running down the drain," documenting his observations with a hidden camera. Hall, Huston and the actors studied the film and used it as a model for mimicking reality. The success of this approach is evident in the completed film, which has a grainy texture that never allows the audience to forget the harshness of the reality depicted in the story.

There were times when Hall called *Fat City* the film nearest and dearest to his heart. It bothered him that the film wasn't a commercial success. He felt it deserved an audience, and for years afterwards, he screened *Fat City* at schools and analyzed why it hadn't succeeded at the box office.

Hall shot four other films during that period: *Electra Glide in Blue* in 1973, *Smile* and the Oscar-nominated *The Day of the Locust* in 1975, and *Marathon Man* in 1976. On the latter two pictures, Hall made the acquaintance of director John Schlesinger, who recalls the collaboration fondly: "Connie is one of the very best cameramen I've ever worked with, although he can be quite a cantankerous character at times. He's very critical, and very involved with the entire process of filmmaking, so he certainly keeps directors up to the mark. He's committed to excellence, and he has a great knowledge of what the camera can do. We had a wonderful time on *Day of the Locust*, which was an absolute joy to make. Connie and I discussed the look in great detail before shooting and decided to balance the darkness of the story with a hot, muggy background glow. One of Connie's greatest attributes is his



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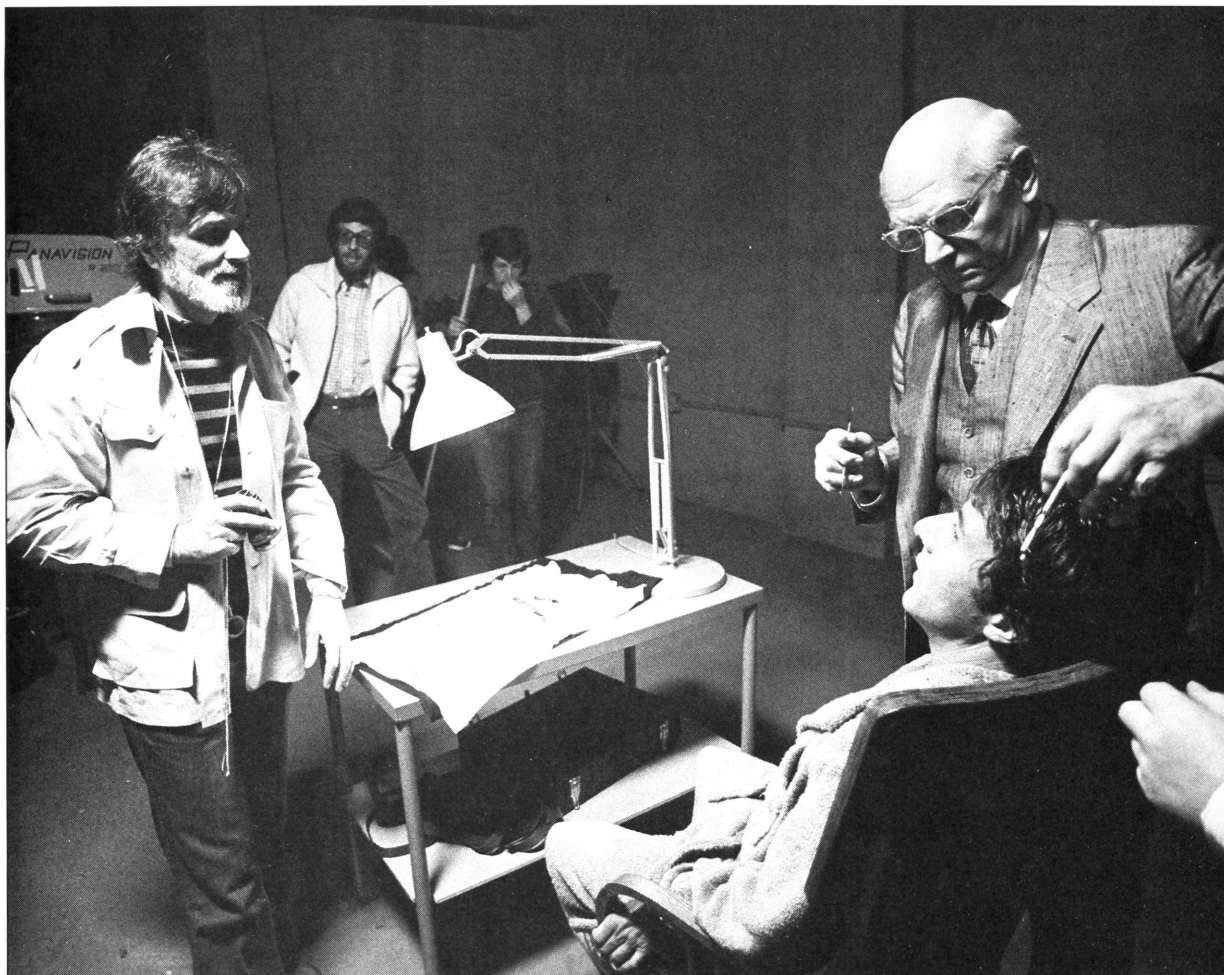
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On the set of *Marathon Man*, Hall watches as Lawrence Olivier and Dustin Hoffman rehearse the scene that undoubtedly kept thousands of cavities from being filled (photo courtesy of Conrad Hall, ASC).



ability to find and convey the mood of a story. Many cinematographers will simply set up the lights and let it go at that, but Connie really attempts to get at the heart of the subject matter."

While working on *Marathon Man* with Hall, however, Schlesinger noticed a change in the cinematographer's demeanor. "He seemed less happy on that picture; I think he was getting antsy about wanting to direct his own films. I detected a restlessness and impatience in him, but he still did an excellent job."

Marathon Man ended Hall's string of 18 films made over 12 years. He would not shoot another feature for 11 years. Determined to pursue other avenues of endeavor, Hall formed a commercial production company with Haskell Wexler, ASC, and directed and shot hundreds of ads. His shooting was experi-

mental at times, and it also gave him an opportunity to observe other cinematographers at work. But to many, the move was like Bach eschewing symphonies in favor of country music.

Hall says that he spent much of his self-imposed "sabbatical" writing an original script, as well as another based on the William Faulkner novel *The Wild Palms*. As Schlesinger had sensed, he was determined to direct his own film, to control the filmmaking process from beginning to end. His longtime wish may finally be granted in the near future; Hall recently struck a handshake agreement with producer Scott Rudin in which he promised to shoot *Searching for Bobby Fischer* if Rudin would give him a deal on *The Wild Palms*.

Looking back on his long hiatus, Hall reflects, "In some ways, it was the best time of my life. I have no regrets. I was very

happy sitting alone at a dining room table, writing a script. It was something I had to do. It's something I still have to finish. Photography is a very important part of my life. But at heart, I am more than a cinematographer. I'm a filmmaker."

Hall adds that he also managed to enhance his knowledge of photography by collaborating on commercials. "Every cinematographer I worked with had his own way of solving problems," Hall says. "I directed many commercials shot by George Folsey. He would call for innumerable lights until, finally, the gaffer would say there was nothing left. With all of those units, George was always creating simplicity. The complexity of his lighting was never apparent in the images. He lit with little simple strokes of light. Others used broader strokes with bigger and fewer units. If you paid at-

tention, you learned by osmosis. The truth is that every experience, every feeling, and every film you see becomes part of the sensibilities you apply to making a movie."

Hall returned to the world of feature films in 1987 to shoot *Black Widow*, a lush film noir effort. Robert Towne, a director he'd wanted to work with, then got Hall interested in shooting *Tequila Sunrise*. Unfortunately, the studio had agreed to shoot the picture with a non-union crew, precluding Hall's participation. The cinematographer instead accepted an offer to photograph the Christmas comedy *Scrooged*, but personality conflicts led to his dismissal from the picture.

Hall was back on his island in Tahiti, "watching the coconuts fall," when Towne called to report that the *Tequila Sunrise* film company had finally signed a union contract after five days of shooting. The director entreated him to return to work on the picture, citing an aesthetic conflict with the original cinematographer, who had supposedly told Towne that he didn't want to continue on the picture. Mindful of professional protocol, Hall told Towne he would only take over if the other cinematographer gave him his blessing. After having lunch with the disgruntled cameraman, Hall finally agreed to take up the reins.

"I didn't know what Robert was thinking, but *Casablanca* was on my mind," Hall says. "I saw *Tequila Sunrise* as a romantic picture with complex, bigger-than-life characters. There was a lot of fog and wet streets. It reminded me of the contrast characteristic of the romantic black & white films made by Old Hollywood."

The film's colors are lush and deeply saturated, but Hall approached *Tequila Sunrise* as he would a black & white film. He interpreted daylight exteriors on the seashore as glaring white light, and nights as lush, pure blacks. Much of the film involved

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Hall watched and listened while Towne led the cast through rehearsals. Then they discussed how each scene should be visualized. Hall used a "quiet camera" with very little movement, even on the longest dialogue scenes. He would shoot over someone's shoulder, and then inch in closer until he brought the audience into intimate eye-to-eye contact with the character. The cast provided the motion, and he probed the darkness with the aid of fast Primo lenses and the 500-speed Eastman 5294 film.

Whenever possible, Hall lit from practicals. In one restaurant scene, he simply cut the backs off of lamp shades on the set and replaced them with diffusion material. Hall augmented the ambience by lighting through sheets of bleached muslin, creating a very soft, non-descript light, seemingly emitted by the practicals.

"Contrast is what makes photography interesting," he says, "and there is more than one way to create it. You can flat-light someone and keep the background dark. You can cross-light the cast and keep strong shadows on their faces. Or you can back-light the cast and use more somber and gentler light to bring out their skin tones."

He used all of these techniques while filming *Tequila Sunrise*. Sometimes he used a light net or a Superfrost filter on the camera lens. For night exteriors, he generated thousands of cubic feet of fog. Then he backlit characters and modeled their faces with very soft light, and used strong cross- or front-light to create contrast between the actors and background.

A twilight shot of swings in a park has always generated much interest among cinematographers, who invariably ask Hall how many nights he needed to get it right. Hall relates that he shot the sequence like a commer-

cial; the swings were portable, and the crew merely shifted their positions so the setting sun was always in the right place.

Recalling the *Tequila* shoot recently, Towne credited Hall with both creative genius and unflagging dedication. "Everybody knows that he's great, but in some weird way I still think he's underrated. He's a man with the passion and enthusiasm of a kid; he has the generosity, simplicity and insightfulness of the rarest gifted people. I would never bother to tell Conrad what kinds of shots to make; he would just say to me, 'Tell me what you see.' He'd listen and then say, 'O.K., I've got it.' He really understands where the dramatic fulcrums are in the scene. He's also uncommonly sensitive to the performances of the actors: he knows when somebody's 'on' or 'off,' and he innately understands where people should be in the frame.

"One of my favorite memories from that shoot involves Connie," Towne adds. "We had 40 nights on the movie over a 66-day schedule, and it reached a point where he was so exhausted it looked like he was asleep during retakes. He was sitting in a chair, and his head was just jerking back and forth from fatigue. I thought to myself, 'Well, I shouldn't bother him, the retakes are going badly anyway.' Then, after the third take, he suddenly opened one fish eye and said, 'I don't know why the f—k you're bothering to shoot this; it's just as bad as it was the first time.' Even in his sleep he knew it! Finally, on the fourth take, it got good, and his eyes opened as if by magic. The man is uncanny."

Hall's experience on *Tequila Sunrise* reignited his passion for photography. His subsequent films included *Class Action*, *Jennifer 8* and *Searching for Bobby Fischer*. A third-time remake of *Love Affair*, starring Warren Beatty and Annette Bening, is still in postproduction.

Bruce Robinson, the director of *Jennifer 8*, says of his

time with Hall, "It was the best creative relationship I've ever had. He wouldn't ever let you make a mistake from a technical point of view; he truly knows everything there is to know about filmmaking, and he's very generous with that knowledge without ever making you feel as if you're a poor relative. He makes the camera a privileged viewer of the narrative; there's only one place for the camera as far as Connie is concerned, and that's the *right* place. While we were working, I said to him at one point, 'How do you know where to put the camera?' And he replied, 'I point the camera at the story.'"

On *Bobby Fischer* (see separate story), Hall lent a guiding hand to first-time director Steve Zaillian, who reports that the veteran's ideas on the filmmaking process made a lasting impression. "Since it was my first directing job, I had a tendency to want to plan everything out, and I did that for the first few weeks. But Connie taught me the value in being open to the unexpected. When we showed up on the set, he'd ask me what scene we were doing that day, and then he'd force me to tell him what I thought it was about. And we wouldn't even talk about how to shoot it until we'd seen a rehearsal. It was a little scary to work that way, not knowing exactly what we were going to do, but it was also exhilarating. His approach to the film was his approach to life: whatever you're working on at the moment is of paramount importance, regardless of its relative size or scope. If I were to direct another film, I'd feel lost without him; I depended on him that much."

Hall confirms that his own approach to cinematography is primarily instinct-driven. But those instincts are based on a lifetime of impressions stored in his visual memory. He frequently compares himself to a river fed by many small streams that represent the different experiences in his life.

Analyzing the contem-

porary world of cinematography, Hall notes that rapid improvements in technology are changing the art itself. "With today's fast films," he says, "you can light the way your eye sees the scene. You can abuse the film and create subtleties in contrast with light and exposure, diffusion and filters. That's what makes it an art. Cinematography is infinite in its possibilities — much more so than music or language. There are infinite shadings of light and shadows and colors; it's an extraordinarily subtle language. Figuring out how to speak that language is a lifetime job. You are always a student, never a master. You have to keep moving forward."

While Hall appreciates the new creative options presented by technological advances, he has also noted a few detrimental side effects. In his opinion, the worst invention in modern filmmaking is video assist. "There are a lot of directors who are knowledgeable about images, and others who aren't," he says. "In the latter scenario, video assist interferes with the collaborative process. You have two dozen people looking at an image on a monitor and saying, 'What if we tried this?' Suddenly, everybody has an opinion."

Hall's ire is not fueled by a desire for control, but by his perception that such toys could drain the passion from the art form. In explaining his position on the issue, he limns a creed that filmmakers everywhere should take to heart.

"This isn't a job for me," he says. "It never has been. It has always been a way of life. I realize that every picture isn't a work of art. But you still have an awesome responsibility, because you are helping to create something which might influence the thinking of millions of people. Movies are entertainment. They are a diversion from reality. But they can also make a lasting impression about the human condition." ❧

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Photographic Grandmaster Shows Moves in *Searching for Bobby Fischer*

Conrad Hall, ASC eschews flashy style in favor of instinctual approach that "serves the story."

by Stephen Pizzello

A true artist, it is said, does not care much about the size of a given project, the financial compensation, or the anticipated kudos for his efforts. To such individuals, the craft itself is of paramount importance. With his exceptional work on *Searching for Bobby Fischer*, Conrad Hall, ASC has served notice that for all of the acclaim he has received (see related story), he remains a cinematographer's cinematographer, tackling small projects with as much enthusiasm and expertise as he'd expend on a big-budget bonanza.

Of course, even artists have occasionally been known to negotiate shrewdly to achieve ulterior aims, and Hall, no stranger to the peccadilloes of Hollywood haggling, freely admits that in this instance he was able to use his ability as a bargaining chip. "I was about to do the picture I'm shooting now with Warren Beatty, a third-time remake of *Love Affair*, but I felt that it just wasn't coming together. The principals, Warren and Robert Towne, who is no longer involved, were keeping the project very much in the dark, and I didn't really know what it was all about. It began to smell like they would never get going. At that time [producer] Scott Rudin sent me the script for *Bobby Fischer*, and I loved it. So I went to Robert and he gave me permission to

go off and do this. While I had Scott's ear, I approached him about two of my pet projects, one of which is William Faulkner's *The Wild Palms*, which I've been trying to turn into a film for 20 years. I said to Scott, 'I'll make you a deal: I'll photograph this film for you if you'll get me a deal to make one of my two scripts — *Rubio* or *The Wild Palms*. He liked *Wild Palms* better, and it's moving forward very well."

Sitting back in the airy spaciousness of his West Hollywood apartment, which affords an altitudinous view of the city below, Hall allows himself a satisfied smile. He has certainly tasted the fruits of his chosen profession, but it's clear that he still cares most about creating an enduring body of work. With a resumé that includes *Butch Cassidy and the Sundance Kid*, *In Cold Blood*, *The Professionals*, *Day of the Locust*, *Electra Glide in Blue*, *Harper*, *Cool Hand Luke*, *Fat City*, *Marathon Man*, *Black Widow*, *Tequila Sunrise* and *Jennifer 8*, that goal has already been achieved, but Hall remains obsessed with providing audiences with works "that aren't just exercises in stylistic excess, and that have a bit of depth and merit."

Searching for Bobby Fischer met all of Hall's requirements. The film was adapted from Fred Waitzkin's non-fiction book of the same name, which presents

the author's "Dad's-eye view" of his young son's rise to prominence in the high-pressure world of competitive chess. The screen version of this inspiring, heartfelt tale stars Joe Mantegna and Joan Allen as proud parents Fred and Bonnie Waitzkin, Max Pomeranc as child prodigy Josh Waitzkin, Ben Kingsley as the

Produced by Scott Rudin
and William Horberg
Directed by Steven Zaillian
Director of photography,
Conrad Hall, ASC

Photos by Kerry Hayes, courtesy of Paramount Pictures





boy's rigorously strict chess teacher, and Laurence Fishburne as a streetwise chess hustler who befriends Josh while working the boards in New York's Washington Square Park.

The cinematographer's approach to *Bobby Fischer* reflected his own personal nature. "I'm a philosophical kind of person," he explains. "I grab onto a basic of the story, and that becomes the foundation of everything. What I like to do is get a kernel of understanding, a one-sentence view of what the story

is, from which springs all of the storytelling needs as they occur. I like what I do to be instinctual, but based upon a fundamental truth or poetic vision of the story."

In the case of *Bobby Fischer*, "magic naturalism" became the mantra that described Hall's method. "Prior to this film, I had been moving toward naturalism on several other pictures — naturalism being, to me, 'the way it is.' The magic consisted of stylistic touches to heighten the atmosphere. A good example of this

approach is a shot in which the father and son are coming down a hallway where there's so much light they seem to be floating. I used 20Ks and blew out the windows at the end of the hall. It's those little things that give you that sense of 'I've never seen this before,' and that's the essence of what magic is. Throughout the picture, I used light in both exorbitant and understated ways. I'd occasionally use so much light that it would blow things out, but other scenes are so dark that you're almost struggling to see.

Chess prodigy Josh Waitzkin (Max Pomeranc) ponders the competition. In key scenes, Hall used small mirrors to create shadows of the pieces on the players' shirts.



Above: *Streetwise* chess hustler Vinnie (Laurence Fishburne) acknowledges his young charge's skill as proud father Fred Waitzkin (Joe Mantegna) looks on. **Right:** Previously vanquished players watch Josh and an opponent duke it out at a tournament.

Of course, such an approach has to be integrated so it doesn't distract from the story."

To achieve the look he wanted, Hall used Panavision cameras with Primo lenses. "I didn't use any zoom lenses at all, and I used very little diffusion — an eighth to a quarter ProMist was the only thing I ever used. These Primo lenses are so sharp that they're sometimes brutal; I wanted naturalism, not brutality, so I added just a little bit of softening to take that edge off. Every shot was difficult from a technical standpoint, because I was mostly on long lenses to get the close-ups we needed. The depth of field was extremely narrow, to the point where the focus puller, Tony Guerin, would ask, 'Which eye do you want in focus, Conrad?' He just couldn't carry both of them."

His film stocks of choice were Kodak's 5296 for interiors and 5248 for exteriors. "I was working at T1.9, which was as wide-open as I could go on the lenses. Every shot was done at 1.9, which is the minimum focus of the lens, at the least desirable end of it. I like the way the new film gathers light, so by not stopping down I could gather the most light and print where I like



to print with the fast film, which is at the 'edge of the cliff' — where one light more will push you off and give you junk. On the other side, you're exactly the way you want to look, with no grain, because you overexposed rather than underexposed."

Hall feels that his strategy of alternating areas of light and darkness made sense not only aesthetically, but logistically. "I didn't want the picture to be like *Leave It to Beaver*, or the typical brightly-lit boy's film," he says. "I felt it was a drama about the nature of genius and of parenting, and also about

the philosophical adversities of coaching. There were conflicts between the different styles of Josh's coaches, as well as jealousies that occur between a prodigy's parents and his coaches.

"From a more practical point of view, there was the issue of the settings. Unless you've constantly got all of the lamps on, there's not much light in a New York brownstone apartment; there are a lot of tiny little windows, and it's dark in there. When the light does come in, it can be very harsh in certain areas and very dark on the other side of the room. All of the apartment footage was shot on a stage in Canada; the only location footage was the Washington Park scenes. For the apartment scenes, I lit ev-

everything from outside the windows unless there was a [household] lamp on inside. I would sweeten or tidy up the lighting if the scene required it, but basically it was what it was. My main lamps were a 20K and a pepper — the biggest light and the smallest. Every light that I use is focused; there is no light that is flooded. This technique creates a very hot center that bleeds off softly. Oftentimes I use the edge of the light rather than the center; sometimes the actors have to cross that center, in which case they'll burn up about six stops, but it's over quickly and doesn't

frank prinzi on film:

"Filmmaking is our most potent form of communication. The art of cinematography comes from creating an impression of reality, stretching it to the edge, and making it into something special. The smallest nuance can make a big difference. It's like jazz. You play off all the other instruments. You are creating rhythms, textures. It's another language. You can intellectualize, but it always comes down to your own gut feelings. It's also about contrast, dark then bright, soft then loud.... Imagine the fragile sound of a flute playing...then suddenly the screech of violins and the pounding rhythm of a piano. It's one of the things that keep our hearts beating and blood rushing. Film is the distillation of the arts. When it really works, and everything magically comes together, it can parallel our most powerful experiences."

Frank Prinzi

Frank Prinzi won a 1992 Emmy and 1993 nomination for photographing "Northern Exposure." His other credits include "The Prince of Pennsylvania," "The Suicide Club," "True Blue," "Gideon Oliver," and "Sleepwalk."





Above: *Hall's use of "magic naturalism" — source-based lighting with a touch of wonder — is apparent as Josh soaks in the wisdom of his chess teacher, Bruce Pandolfini (Ben Kingsley). Right:* *The close connection between father and son is conveyed via warm, subtle lighting touches.*

make any difference. The edge of the light gives you the chance to vary the intensity by twisting the light closer to or further away from what's in the frame, rather than adding things or cutting it. Sometimes, for example, I've lit scenes of people in which the hot spot is on their belly — but it's a chest shot, so the light glows up into their faces."

In attempting to give the film a sense of "the wonder of childhood," Hall employed a number of subtle techniques, including the use of a magic lantern-type device to create whimsical lighting patterns in Josh's bedroom. He notes that production designer David Gropman and writer/director Steve Zaillian actively sought to infuse the film with a sense of innocence. "David lent a lot of that tactile, childlike sense to things," he notes. "And Steve is both a child and an adult. His involvement in helping Max with his performance was extraordinary to watch; it was very touching. His approach of being a special friend to Max — rather than just being a director to an actor — lent to the success of the film and to Max being such a natural performer."



Particularly effective is a scene in which the two boys, well aware of each other's reputations but yet to meet head-to-head, circle each other at a distance, John Wayne-style. "That's one of my favorite shots, because it really captures the terror that you feel for competition with someone who has such a great reputation," Hall says. "The magic naturalism occurs when Josh walks to the Coke machine, then starts to come back but suddenly changes direction and

circles the other way. When we did that shot, I didn't know Max was going to walk that way; he just did the wrong thing. And when he stopped, he was under an illuminated portrait of Bobby Fischer that was in the background. I didn't set that up, and the director didn't set that up; it's the kind of accident that provides magic. I'm *looking* for the accident, the joyous happenstance that occurs with filmmaking, rather than going through some tortured manufacturing of the image. What's happened today is that because of video assist, everyone thinks they're a master at it, and they start torturing the image from the video screen without thinking about the camera or anything else. Unfortunately, today the collaboration occurs less with the real filmmakers than

with people who aren't filmmakers but have the power or access to be able to help with the manufacturing process."

In keeping with his overall approach to the film, Hall tried to keep the look of the chess club, which he described as "a dark and dismal kind of place," as true to life as possible. Although the large interior featured a skylight, the cinematographer opted to use fixtures so he could create sunlight at his own convenience: "I had the light burning down on

the characters sometimes when they stood in it; when they weren't in it, there were other little lights that kept the chessboards lit, but nothing else. I didn't want to illuminate everything."

Although Hall himself doesn't play chess (a chess master was hired to ensure the accuracy of the filmed moves), his instincts led him toward a style of shooting that will silence anyone who claims that the game is inherently uncinematic. The film is rife with sequences that capture the raw tension of chess junkies in full cerebral collision, and Hall's approach to these scenes is both inventive and a bit risky. "Because of the nature of the game of chess, which is about concentration and focus, I did something compositionally which I felt lent to the picture — framing the characters' heads so that their eyes were very close to the top of the frame, sometimes disturbingly close. That was an example of using the composition to draw the viewer's attention to the windows of the thought process — the eyes — by putting them in a place in the frame that is not quite as comfortable for the viewer. Normally you'd see the top of the head, including the forehead and the hair. Without those in the frame, there's no comfort and you wind up concentrating on the eyes.


"In trying to get the feel of the game across, I just sort of took the camera and followed what looked most interesting to me," he continues. "I would watch a person's eyes until I thought the result of a move was just about to happen, and then I would move before the eyes went to it; on the way to the piece, the hand would overtake my move and grab the piece. Then I'd swing over to the chess clock, or maybe just drift back over to the eyes, hoping to find something. More often than not, I managed to catch something interesting, and that turned out to be the most exciting way of covering

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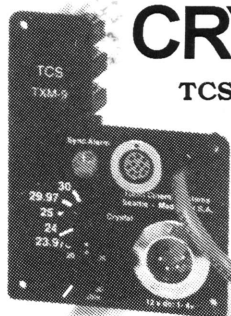
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chess that I've ever encountered. To me, it's fast breaks and slam-dunks with Chick Hearn announcing!"

To capture the lightning pace of the "speed chess" favored by Fishburne and his Washington Square Park cronies, Hall employed two cameras. The added unit also helped to pick up the byplay and extemporaneous dialogue between the players, especially Pomeranc and Larry Fishburne. "Larry is covered from the back of his head a lot — a three-quarter angle that gives you the sense of his brain thinking. You see an eye occasionally, then you go to his hand and up to the other person. We called this technique 'fishing.' They'd play a game of speed chess, and we'd fish; there was no structure to the shooting. I'd be on one camera and Rob Hahn, my camera operator, would be on the other. In fact, the camerawork throughout much of the picture was unstructured; I'd pan back and forth between the father and son, for instance, and just go with what I felt. Every now and again we'd happen upon the magic. It felt loose and free, and I guess that's sort of the same mental process one uses while playing chess and trying to figure out the next move."

While shooting in the bustling park, Hall enlisted the aid of famed documentarian Albert Maysles, who was simply turned loose with a camera to stalk unsuspecting subjects and capture the setting's lively ambience. Maysles returned with several memorable images, including a chessboard reflected in a pair of sunglasses and a shot of a man riding a unicycle while covered from head to toe in a makeshift "suit" crafted from aluminum cans. "We just sent him out with a camera and some instructions on which filters to use and how to expose, because I like to overexpose," says Hall. "He did some outstanding inserts that really help start the film up."

Knowing that he would need something special for the

film's climactic match, Hall combined some majestic camera moves with smaller, more subtly revealing moments. The championship chess tournament that closes the story was filmed at a private school in Canada, and Hall took full advantage of the structure's cavernous interior. Operating the camera himself from a narrow alcove, Hall executed a spectacular "reveal" that swooped over the edge of the alcove and hovered above the endless rows of chessboards below. For the final showdown between Josh and his Po-faced nemesis, the cinematographer pulled a tried-but-true tactic out of his bag of tricks. "I use mirrors a lot, because mirrors create magic light," he says. "When the two boys were playing in the championship match, I had my 'natural light' — 12Ks — coming through a big bay window behind them. Then I set up a bunch of little mirrors. The light would hit the mirrors and I'd focus them just on the tops of the chess pieces so that the shadows from the pieces would fall on the chest of Josh's opponent, who was wearing a white shirt. Every move that Josh made was reflected on the other boy's shirt; I also used a mirror to place the shadow of Josh's head on the shirt. It was very carefully structured so that you'd get all of these little effects without them calling too much attention to themselves."

Reflecting upon the project, Hall concedes that *Bobby Fischer*, while critically acclaimed, didn't generate the kind of box-office numbers that excite industry bean-counters. In his next breath, however, he quickly dismisses such considerations as "irrelevant" to the integrity of the work itself, and maintains that the film will always occupy a special place in his professional memory. "It's a nice film and it's a film I'm terribly proud to have been a part of," he says. "It's a work of substance, quality and feeling, and that's what storytelling is all about." ✎

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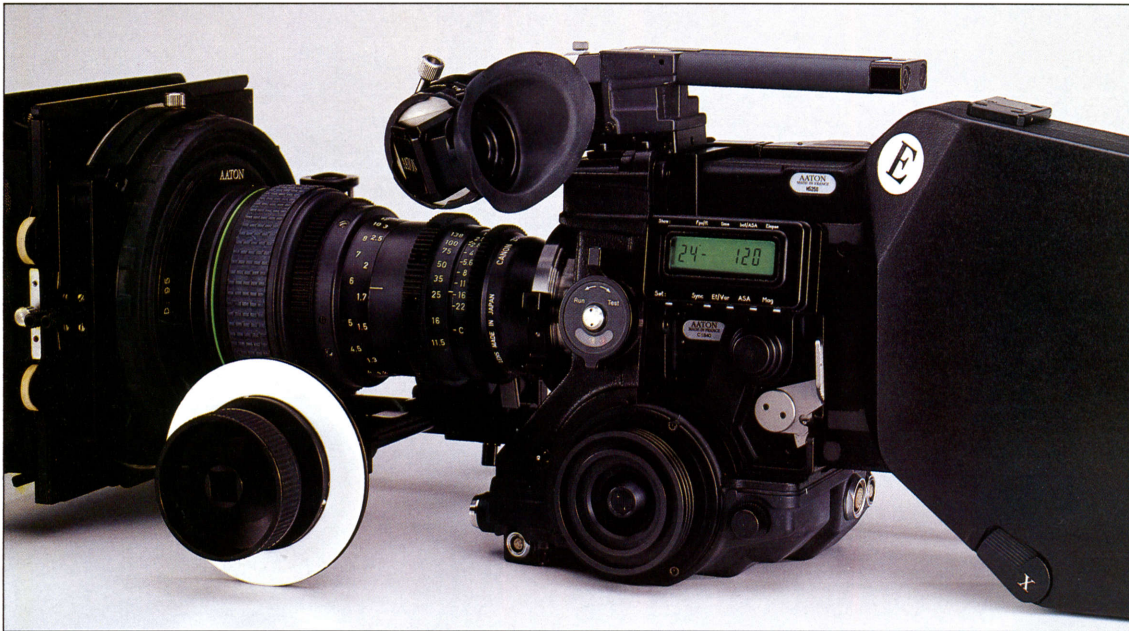
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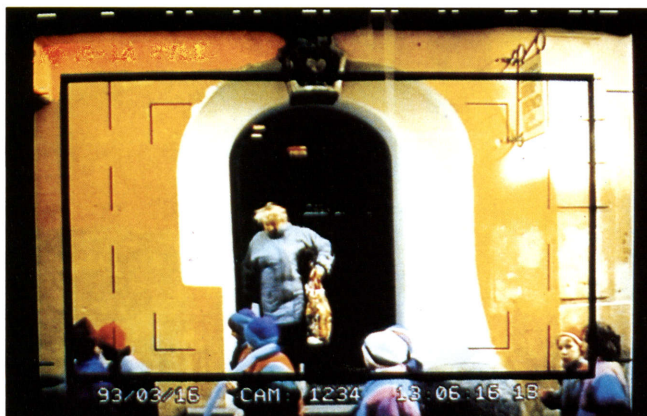
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Image Stability	1/2000 of image	1/2000 of image	1/2000 of image
Hair-Free Gate	yes	yes	yes
Lateral Pressure Plate	yes	yes	yes
Co-planar Claw Design	yes	yes	yes
16 / Super 16 Switchable	yes	yes	yes
AatonCode In-Camera TimeCode	-	yes	yes
Viewing System	universal fiber optic	universal fiber optic	interchangeable G.G.
Aatonite Illuminated Viewing	-	-	yes
Speed Range	2-75 fps	2-75 fps	2-75 fps
Crystal Speeds	24 . 25 . 30	24 . 25 . 30	2-75 in .001 Increm
CCD Assist	yes**	yes	yes
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Camera Mount	Aaton***	Aaton***	Universal - Aat. PL.PV
Mirror Shutter	180*	180*	multi-pos 144° 172.8° 180°
Accessory Inputs	Amph9.Lemo6	Amph9.Lemo6	Amph.Lemo6.Lemo8
Digital Photometer	-	yes	yes
Pre-End & End of Film Warning	-	yes	yes
LCD Display	-	yes	yes
Illuminated Display	-	-	yes
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First-time director Boaz Yakin can pinpoint the exact moment when veteran cinematographer Adam Holender, ASC caught on to the freewheeling aesthetic of *Fresh*.

"It was the second day of shooting in Brooklyn," Yakin recalls. "We were setting up a one-shot of two characters just talking on the street. I said to Adam, 'Let's put on a really long lens and get further back.' Adam looked sort of nervous, because I think what happened to cinematographers like him, who were allowed to shoot all sorts of crazy stuff in the '60s and '70s, is that at some point the studios just started grinding them down — you know, 'What is this lens?' and 'This scene is too dark.'"

"Adam looked at me and said, 'You mean you don't think that looks weird or something?' And I said, 'No, no, let's do it!' And right then, you could see this excitement come into him. From that day on, he knew that I wanted him to do the kind of cinematography he's really great at doing. It was fun to see Adam loosen up."

Fresh, made for a mere \$3.5 million and shot entirely on location last summer in Brooklyn, NY, marks a rejuvenation of sorts for Holender, whose lengthy cinematography credits include the Academy Award-winning *Midnight Cowboy* (1969), *The Panic in Needle Park* (1971), *The Idolmaker* (1980), *Street Smart* (1987) and *To Kill a Priest* (1989). The story of a resourceful 12-year-old African-American youth (played by newcomer Sean Nelson) who uses self-discipline and nascent intelligence to sidestep the daily perils of his urban childhood, *Fresh* would seem to be a perfect project for Holender, considering his proven gift for gritty urban cinematography.

"I do like life as I see it, as opposed to life dressed up,"

Produced by Lawrence Bender
and Randy Ostrow
Directed by Boaz Yakin
Director of photography,
Adam Holender, ASC

Holender explains in his slight Polish accent at a bustling West Hollywood restaurant, a month after the end of principal photography. "There are a lot of great images to be found in that."

This affinity for naturalism has been a motif in Holender's work since he first picked up a camera during his

rushes before he could talk to me for forty-five minutes," Holender reflects. "And he was a tired man after a full day's work! But this routine also had its advantages. After I got off that train, I could watch him work for a few hours, and he would share his difficulties from the day with me."

With winters devoted to

cally rebellious study of the unusual friendship that develops between a naive hustler (Jon Voight) and a conniving derelict (Dustin Hoffman) in New York City's grimy underbelly.

Holender soon found that his then-unconventional approach to lighting — soft, determinedly source-based lighting

Veteran Cinematographer Moves in *Fresh* Direction

Midnight Cowboy alumnus guides first-time director through the streets of New York.

by Chris Pizzello

formative years in Poland. Holender had originally studied architecture, but a summer draftsman's job which required him to shoot still photos of prospective locations awakened him to the purely creative possibilities of photography.

"Pretty soon I was more interested in *photographing* architecture than actual architecture," Holender recalls. "I got more and more involved in photography and film, and I eventually applied to the Polish Film Academy. My chances were not good; it was a very tough school to get into. But when I did, I quit architecture."

Holender immersed himself in film with near-religious fervor. Since many of his teachers were still some of the most talented working professionals in Poland, Holender found himself traveling to real film sets to receive extra schooling.

"Very often I would jump on a train and travel for four hours to a location where my professor was shooting his current film, then wait for him to finish with his shooting day, shower, and take a look at his

school life and summers spent gaining practical experience on sets, Holender was sufficiently confident after five years to journey to the U.S. in 1966. He sailed across the Atlantic to Montreal, where he then caught a Greyhound bus bound for New York City — an image that may be familiar to film buffs. "I managed to reproduce that ride almost exactly in *Midnight Cowboy*, when Jon Voight is gazing out of the bus as he arrives into the city," Holender grins. "I distinctly remembered that image of the New York skyline when I rode in."

Holender began working as a production assistant for a small 16mm documentary company in New York, shooting whenever he was allowed. Then he moved into the rather foreign realm of television commercials, which Holender never even knew existed before moving to America.

The exacting, detail-oriented nature of commercial work further polished Holender's skills, and director John Schlesinger was sufficiently impressed to offer him his first feature film assignment on *Midnight Cowboy*, an unsparing, cinematographically

inspired by the work of East Coast still photographers such as Irving Penn, Bert Stern and Richard Avedon — clashed with the more traditional attitudes of veteran crew members working on *Midnight Cowboy*.

"I was shocked that nobody liked this style," Holender remembers. "Also, there were almost no lighting instruments available to facilitate this kind of look. When I tried to do this, the technicians and gaffers dismissed it completely, either as a still photographer's idea of lighting, or as being strictly for commercials. All these labels for different sorts of light!"

Holender also courted controversy by insisting on shooting with the only reflex camera that was then available in New York. "A very good, very reputable camera operator dismissed this idea and said to me, 'Look, this is not the way I work. I need a Mitchell with the rack-over.' I said, 'Don't you think it would be much better for this specific look we are after, long lenses and so forth, if we look at the image through ground glass? In ten years, everybody is going to be doing it this way.' And he

Opposite:
Newcomer
Sean Nelson
portrays the
title character,
who finds
himself fenced
in by the
pressures of his
urban
upbringing.

Top: Sam Jackson, who plays *Fresh*'s vagrant father, was lit in a soft, 'nostalgic' style by Holender to imply the emotional layer of his relationship with his son. Bottom: Seasoned veteran Holender (left) shares a light moment on the set with upstart auteur Yakin.

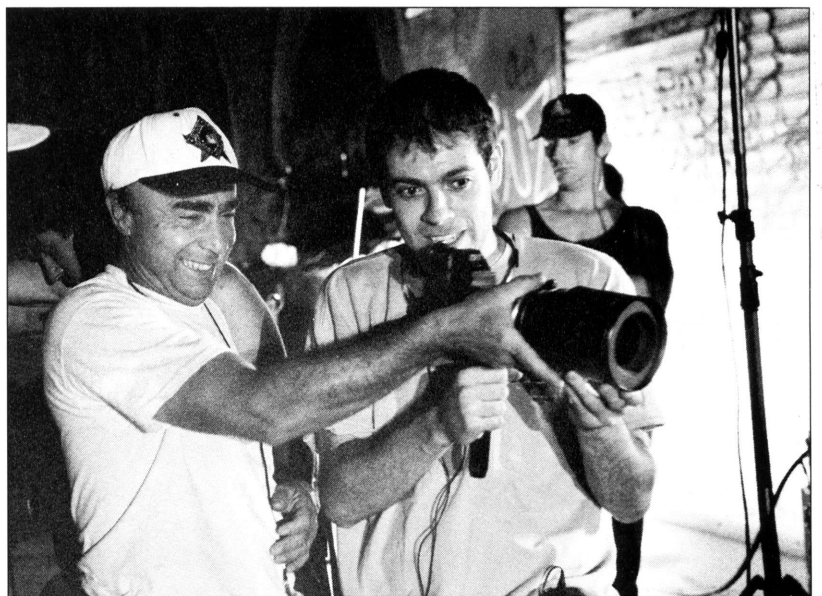


ultra-realism in the early '70s films, insisted that *Fresh* not have what he terms the "movieish" feel of today's studio films. "What I liked about those '70s films was the quality of light," the brash and opinionated 28-year-old director explains during a break from editing *Fresh*. "You had the sense that they were working with natural light even when they weren't. There was a grainy look to them that made you feel like you were watching something with texture. I don't like 'slick,' though they made slick movies back then, too. But their idea of 'slick' was still different from the '80s MTV look,

said, 'Nonsense.' So we compromised. We shot the whole movie with two cameras — one rack-over and one reflex!"

More importantly, Holender found a creative soulmate in English director Schlesinger, with whom he traveled by car through Texas, Florida and New York City for visual inspiration. "He encouraged me to take chances," he says. "What we did was throw away the established conventions of making movies, if you will. [It also helped the film that] neither of us knew the United States well."

Midnight Cowboy went on to win three Oscars and became a touchstone for a startling new breed of gritty, uncompromising New York-based films in the early '70s. (The film is scheduled to be re-released by United Artists in February to coincide with its 25th anniversary.) Films like *The French Connection*, *Dog Day Afternoon*, *The Conversation*, *The Taking of Pelham One Two Three*, and the Holender-photographed *Panic in Needle Park* stubbornly resisted 'false' concessions to conventional film aesthetics, not only in their unadorned cinematography but through brash performances and frequently grim themes. *Midnight Cowboy* was indeed a big break for Holender, who says "everything became easier" in his career after he shot



the film.

Boaz Yakin reached his own turning point in 1991, having nearly given up on the "totally ungratifying" profession of screenwriting. Fed up with the artistic compromises of his trade after selling his script *The Rookie* (which Clint Eastwood eventually directed) to Warner Bros. in the late '80s, the onetime NYU film student waited for an opportunity to both write and direct a film. He finally got his chance when producer and friend Lawrence Bender, riding high after the success of *Reservoir Dogs*, agreed to make *Fresh* on a small budget.

Yakin, a big fan of the

which I don't like at all. Today, every day scene has the same kind of look and every night scene is blue. [That look] tortures me.

"I really wanted this film to have a black & white look, but in color," he continues. "Very real, source-based light. I wanted the light to always look like it was coming from somewhere. I was very comfortable with having characters go completely dark when they walked from one apartment to another."

In searching for a cinematographer with a similarly naturalistic outlook, Yakin screened a variety of '70s films for Bender, including *Midnight*

Cowboy, and asked the producer to contact Holender's agent.

Yakin recalls his surprise when he met the energetic Holender for the first time. "I was expecting some white-haired old geezer to come in," he laughs, "but apparently he shot *Midnight Cowboy* when he was about 28, which really surprised me. Because honestly, to direct a film, you don't really have to know your ass from your elbow. You *ought* to but you don't have to, whereas to be a cinematographer takes a lot of specific skill. To achieve the level of work he did in *Midnight Cowboy* at that age is quite incredible."

Yakin's screenplay struck a chord in New York resident Holender, who had been fascinated by an in-depth series of *New York Times* articles featuring profiles of poor black youths living in American cities.

Holender describes the plot of *Fresh* thusly: "This boy grows up in a housing project without parental supervision. Before going to school, which he takes seriously, he does field drops of drugs for dealers in the neighborhood. He is simply forced to grow up ten times faster than any 12-year-old should. When I read the screenplay, I loved it. It came right on the heels of reading these *Times* articles, which I thought were great journalism. I was shocked by the age of the director — he was only a year younger than my stepson!"

Holender welcomed the challenge of an all-New York shoot, especially since he wouldn't have to perform any dreaded disguise work on the locations. "I shot a 'New York' film called *The Idolmaker* right on the streets of Los Angeles," he recalls with a wry chuckle. "It was frustrating as hell. You find yourself looking through the lens, and suddenly you see palm trees. That's with a 25mm lens; you change to a 40mm lens, but you can still see the palm trees. Finally, you end up shooting with a 75mm and throwing everything out of focus!"

In agreeing to shoot *Fresh*, Holender accepted significant budgetary compromises that would directly affect the number of crew members and his choice of equipment. Yakin's directorial inexperience didn't faze Holender either, since six previous pairings with first-time directors practically had accorded him 'guru' status in regard to the trappings and pitfalls of such a situation.

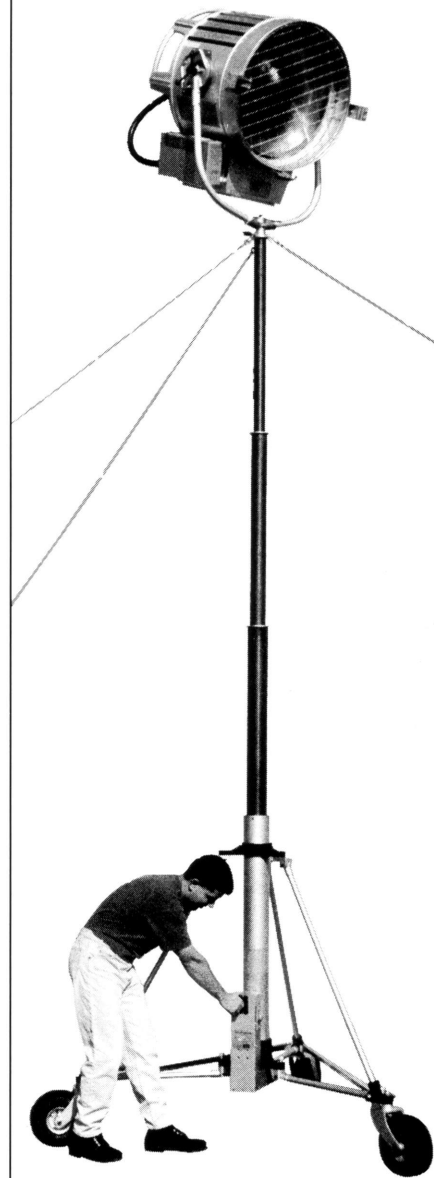
"A cinematographer must be generous," says Holender about his attitude toward first-time directors. "One cannot be stubborn or overly assertive. An experienced cinematographer should not use his position to get his own way just because it's a first-time director. You are asked sometimes to do somebody else's job; in some cases, you're working with a director to whom simple things like screen directions are a problem! But you are still not given a license to run your own project."

Holender did insist on three weeks of extensive preproduction in the Brooklyn project apartments and exteriors, so that precious shooting time — the film had a very tight 40-day schedule — wouldn't be wasted. Armed each morning with a viewfinder and sketchpad, Holender, Yakin and production designer Dan Leigh ventured to every Brooklyn location and broke down each scene into specific setups.

"Adam would tell me what was realistic and what wasn't," Yakin recalls. "We'd argue about it a bit, but that period was really when we defined exactly what we were going to put on film. That was the only way to do it, because there was no chance to go back to any of the locations once we had shot a scene. It was an unnerving and irritating situation, but we needed to be prepared."

While shooting tests for *Fresh*, Holender ran up against a rather ironic difficulty in searching for the rough, textural look Yakin sought. "All the new films

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The young cast members strike street-smart poses on location in Brooklyn. From left: Sean Nelson, Dalquan Smith, Jason Rodriguez and Luis Lantigua.



— the 5293, the 5296 — are fantastic,” he opines. “But they’re almost too pretty for what we were going after. They were too manicured, too fine, and I ended up using an awful lot of [250-speed] 5297 forced one stop. But when we pushed it to 500, I found it to be too thin of a negative. So we rated it at 400, and very often I’d overexpose because we did quite a few silhouettes in the film. We wanted the blacks to be really black.” For night scenes, Holender used both 5296 at its normal ASA and 5297 forced a stop.

Holender also realized that the whirlwind production pace would force him to scale back the customary tools of his trade. “I have an entire case of light meters that I’m used to consulting about everything,” he relates. “But as I was preparing this film, I said to myself, ‘I’ll never have time to fool around with all of them.’ So I went to a discount camera store in New York and bought a Minolta light meter for still photographers; I never used anything else throughout the film.”

To further cut monetary corners, General Camera of New York supplied Holender with a simple but resourceful two-camera package that could perform the work of three: a Panavision Gold II camera was used strictly for setups, while an indispensable Moviecam Compact fitted with a Panavision front piece could be used either as a second stationary camera or when using Steadicam.

Holender needed an equally versatile camera operator capable of operating both the stationary camera and the Steadicam, since the production couldn’t afford to hire two operators. He found his solution in David Knox, who surprised cinematographer and director alike with his faultless precision. “He performed brilliantly combining those two jobs,” enthuses Holender. “I found it to be not a bad way of working — having one operator who understands both what the scene is about and the technologies applied, as opposed to saying, ‘Let’s call this other guy in, because he does Steadicam.’ There was some kind

of feel and visual continuity that this operator tuned into, and he just applied the different technologies to the same ends. It was a more intimate working relationship than a cinematographer normally has.”

Holender and Yakin soon discovered that their work was cut out for them in the project apartments, some of which had ceilings only six feet high. “I had never before used the KinoFlo fluorescent fixtures,” Holender says. “I found them extremely useful because they take up so little room. I needed the flexibility to use the Steadicam moves around those rooms, and no other lights would work. I ended up placing these KinoFlos all over the ceiling. A conventional light couldn’t be used because by the time we nailed it to the ceiling, it would take a foot of space that we didn’t have.”

Even with the handy KinoFlos, Holender found Steadicam work treacherous in the apartments. “The camera pretty much stayed at eye level, but it was very tricky to hide the

lighting fixtures, especially in some instances where we were moving around 360 degrees. Some choreography was required, and sometimes the lights had to be moved *during* the shot." Holender augmented the KinoFlos with several 12K HMIs and PAR lights coming through the windows.

Although Yakin felt from the start that shooting in real locations was the only way to present the staunchly authentic milieu of *Fresh*, he admits that the constant difficulties they encountered in the tiny apartments made him long for the wild walls of a studio. "I would want to compose a shot in these tiny little rooms, and everyone would tell me I couldn't," he recalls with frustration. "It was just impossible. The only way to shoot low angles of characters would have been to light each shot specifically, but we didn't have time. That was the most limiting physical aspect of the film, just being in such impossibly tight spaces."

Two separate cultures are examined in the film, as title character "Fresh" is pressed into service as a drug runner for both the main heroin dealer in the neighborhood (Giancarlo Esposito), a Hispanic, and an African-American crack dealer (Ron Bryce). Holender thought it appropriate to delineate scenes depicting the respective cultures through the visuals.

A student of still photography, he derived inspiration for this idea from a book by Alex Webb, whose work is defined by bold, angular compositions and powerful, saturated colors. "Webb has taken many unique shots of Haiti," Holender says. "As I looked at one of his books, I thought [it would be] interesting if we managed to photograph the Hispanic interiors in a similar way to differentiate it from the black culture in the movie. I suggested this to Boaz, and he liked the idea."

"I got together with Dan Leigh, and we basically gave the

Hispanic interiors much more lavish, garish colors, while keeping the African-American interiors more monochromatic. We did this both through my own photography and by choosing the colors that were in the apartments. We used color gels on the windows of the Hispanic interiors, choosing appropriate colors like deep blues, yellows and oranges. We used all sorts of light sources, like lamps and chandeliers. Then I followed suit by using the same color gels on my lights, to augment what was already in the apartment."

Yakin's aim from the outset was to portray the inner city neighborhood through the guarded eyes of his 12-year-old protagonist. He picked up psychological pointers by examining the subjective schemes of a past master. "I decided that the film should have a 'Hitchcockian' style — not in a thematic sense, but in the way that he would shoot a character and then cut to what the character is looking at. He tended not to isolate characters in the way that Scorsese will let DeNiro just walk through an entire scene and interact with everybody. In this film you see Fresh, and then you see what he's looking at, so the audience is very much tied into his perception."

Holender tried to accent these forced perspectives with judicious camera movement and hard light. "I believe in camera moves that go along with the story, rather than those that merely assert themselves," he states. "We used quite a bit of camera movement to imply the 'energy of life,' as we say. The lives of the people in this film are charged with energy, and the camera movement had to reflect that. Lighting was not gentle in those cases; it was quite brutal and aggressive, which I thought augmented the mood of the story, and Boaz agreed."

In capturing this first-person feel, Holender decided to use predominantly wide-angle and long lenses, all Panavision Primo, and stayed away from

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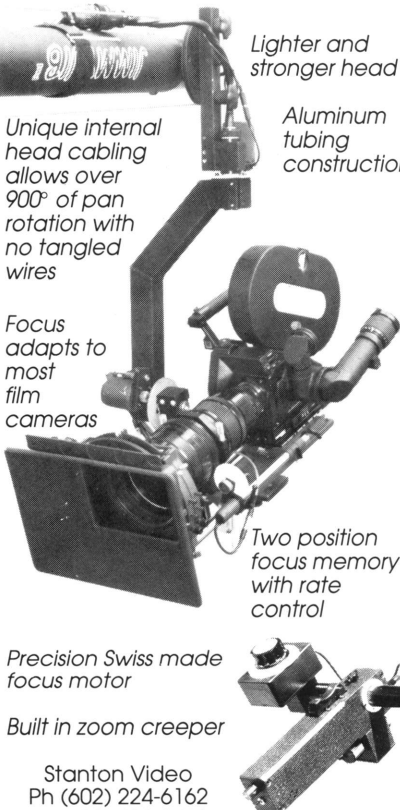
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flat, middle-range perspectives. "I found using [more extreme] lenses to be a more expressive way of telling the story," he says simply. "The 35, 40 and 50mm lenses were too objective for this film."

Primarily a neutral, disciplined character, Fresh is seen throughout much of the film listening to various authority figures who try to steer him in different moral directions. Holender thus devoted special attention to lighting Nelson, in particular his attentive eyes. "He was the most light-absorbing fellow I ever lit!" exclaims Holender about the dark-skinned Nelson. "You literally could not pour enough light into him. Three stops overexposure was the norm for his skin. I ended up staging first, then surrounding him with various lighting fixtures that I would adjust to reflect light on his face. I treated him like a half-mirror piece of sculpture.

"Ray Emery of General Camera built for me a very lightweight aluminum Obie light that we could mount directly above the lens of the camera. This would help light up his eyes, which were very important to the story. They built it so that it could be used with the conventional camera on a gearhead as well as on the Steadicam, so I didn't have to change my lighting from scene to scene in order to maintain the same look. For diffusion we used light gridcloth, Rosco materials, with either blue, orange or straw colors. We didn't want to overfill or overlight with the Obie light. I wanted to apply the light judiciously, only when needed, rather than just blow up the whole set with light."

To create a visual juxtaposition, Holender modified his lighting of the adult characters who exert different kinds of influence on Fresh. Key to the film are several scenes in which the boy meets with his vagrant father (Sam Jackson), a Washington Square Park speed-chess genius. Ostensibly the father and son discuss chess strategy, but the real

subtext of their conversations delves deeper.

"We had to have a chess consultant tell us where to put the pieces," Holender recalls. "We did use two cameras quite freely, one on either Sam or Sean, and the other for hand movements on the chessboard, so that the footage could all be intercut. But these scenes were basically shot for the performance of the actors. We wanted to give off a feeling of the warmth and intimacy these two characters have with each other.

"We gave the father, Sam Jackson, a muted look because we were after a feeling of nostalgia," he continues. "We used a combination of an 81EF filter and a ProMist. We wanted to give him a beige kind of look, which went very well with his skin and wardrobe, which consisted of worn, dirty 'alcoholic's tweeds,' if you will, from a secondhand thrift shop. For lighting, we used large HMIs and some PAR lights, diffusing some of them with large silks — 12 X 12 and 20 X 20. We used softer light in those scenes than in the rest of the movie because of the emotional layer of the relationship between the boy and his father."

Holender exercised a more severe style in scenes involving Fresh and the neighborhood's flamboyant heroin dealer. "We lit those scenes in a much harsher, more colorful fashion," he says. "There was an almost religious lighting motif in the dealer's apartment, kind of warm, candlelit, altar light. We used several Dedo lights hidden behind furniture to simulate the small, pinpointed feel of the candlelight, and we contrasted it with a couple of 12K HMIs that came through the windows. Bright orange and yellow gels were used for the windows to get that Alex Webb-type light, which went very well with the Spanish decor. Colors and value were my main concerns. We don't want the viewers' eyes to wander about the apartment — we want them to go directly

to the character's face."

After toiling in the claustrophobic project apartments, Holender welcomed the visual freedom afforded by larger, more expansive locations, such as an old Brooklyn factory where Fresh craftily applies his father's strategic chess principles to pit a cocaine dealer (Bryce) against his henchmen.

"We had two-and-a-half days of work at that location," Holender describes. "The floor of the factory was lit by direct sun coming through a small skylight in the ceiling. I went there a few times before shooting because I wanted to see how the traveling sun affected the look of the scene. I decided that one could not rely on three days of sun in New York! Also, the sun was moving about quickly. If you staged something, you would have to do it in a very short time since those windows were tiny.

"So I allowed myself one extravaganza and we covered the windows from outside with tarps. I asked the grip, Jimmy Finnerty, and the gaffer, James Dolan, to reproduce that lighting effect — very hot, harsh sunlight in a small area. The ceiling was high enough to allow us to do this inside. We used ten to a dozen HMI PAR lights, in front of which we built a similar pattern of windows from cardboard show cards and flags. On the ground level, we also used HMIs in a low position to define the actors, who were wearing dark clothes, and to separate them from the background, which was also kept dark.

"Since it's a murder scene where the gang leader turns against his strongman, we lit some wide, low-angle shots of people who are lying beaten on the ground. Then we took all the tarps off and shot two remaining scenes [that showed the ceiling] and explained where the light was coming from."

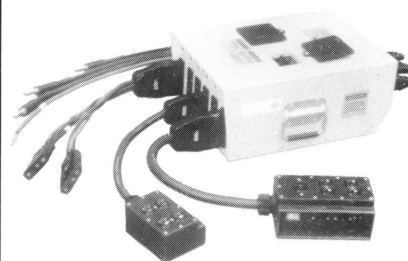
One might assume that the pairing of an "intense" first-time director (to use Holender's description) with an experienced

cinematographer during a steaming Brooklyn summer would result in a rather unwieldy balance of egos. But Yakin maintains that Holender was never less than the consummate pro. "I appreciate Adam's work a lot," states Yakin, "but as the person who had to be the director, I needed that appreciation back from him. And he gave it to me, in a way that was really wonderful. Sometimes we disagreed, but he never came forth with an attitude of 'Look, I've done this a hundred times before.' He was very gracious and never pulled rank. He very much supported what I wanted to do and made it a collaboration."

While Holender admits that *Fresh* was an arduous shoot, he eventually acquired a perverse fondness for the constant, sweat-inducing challenges of a low-budget production. "One would always wish for more time and equipment, but I have no complaints," he states. "I accepted the rules of the game, and I found this experience to be very rejuvenating. We didn't have time to sit down, and we didn't have air conditioning to keep cool; it was June, July and August on the streets of Brooklyn, and the humidity was incredible. But such situations keep you on your toes. You don't rely on equipment to fill the gaps — [the responsibility] is all in your fingertips. If you have strong convictions about the look of the film and limited resources, it becomes important to maintain and inject your spirit about the project to the crew. That is how you develop a good camaraderie and get the visual results in sometimes adverse conditions."

"I remember the producer's words to me before I started this film," he sums up. "He said, 'With low-budget movies, you work much harder, you get paid much less, and you're an happier lot.' More or less, all of that was true, with the exception that I wasn't unhappy shooting this film. I understood that this movie had to be made."

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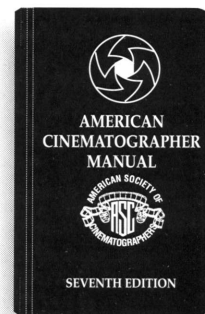
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On Location *Where the Rivers Flow North*

Cinematographer exploits nature's nuances to film period drama.

by Paul Ryan

Where the Rivers Flow North, an adaptation of Howard Frank Mosher's period story about a logger struggling to keep his land in the face of advancing modernization, and which culminates in the great Vermont flood of 1927, is, in the words of director Jay Craven, "a film about water where water is not

driven piece, but very dependent on a visual portrayal of these characters' relationship to the land around them. They make their living from the trees that grow on the land, and the river is a transportation vehicle for men and logs; a soon-to-be completed power dam would end this and Noel sees the dam not

only as a mechanical intrusion but a personal and cultural threat. In portraying these people and their land, director Craven hoped to create the "magical realism" that infuses Mosher's novels, in which characters and surroundings are viewed with a transcendent eye and things are not as they first appear.

I've shot a lot of films that closely linked dramatic plot to the natural environment. Early in my career I was

situations to enhance the look of the film. We were impressed by Michelangelo Antonioni's ideas about the profound effect the visual surface of the world surrounding the characters has on our judgment of their actions, a concept I kept in mind while working as second-unit cinematographer on Robert Redford's *A River Runs Through It*. In that film we used the rivers and mountains of Montana to underscore the familial bond between the McLean brothers and their father. (The film gained a cinematography Oscar for Philippe Rousselot.)

In the preproduction discussion with Craven and assistant director Mark Yellin it became clear that there were many exterior locations to be covered, and that the actors' tight schedules dictated a very rigid filming schedule. As Mark put it, "We're shooting every day, regardless of the weather." Because of the capriciousness of the local climate, our entire cinematic approach would have to allow for fast movement and visual spontaneity.

It also became clear that we would be spending a lot of time in trees: Noel and Bangor live in a log cabin and run a cedar oil still located deep in a stand of tall pines. The quality of light in a forest is soft yet highly directional, and I felt we should maintain that. Beautiful as the natural light was, I was sure we would need to light the woods. Vermont is pretty far north and in Septem-



Photos by Joseph Mehling, courtesy of Caledonia Pictures

supposed to be." But it is also a unique love story about the relationship between logger Noel Lord (played by Rip Torn) and his Abenaki Indian housekeeper and mate Bangor (Tantoo Cardinal). The film, in which Michael J. Fox and Treat Williams play key supporting roles, is a character-

fortunate to do the second-unit cinematography on Terence Malick's *Days of Heaven*, which won Nestor Almendros, ASC an Academy Award for Best Cinematography. Nestor and Terry taught me a lot about keeping a flexible approach to the whims of nature and using unplanned

Produced by Bess O'Brien
and Jay Craven
Directed by Jay Craven
Director of photography Paul Ryan



ber, under the tree canopy, the light level would sink below T2 by three in the afternoon. The problem was not lighting the actors but balancing the expanse of background trees to match the daylight look.

In choosing the lighting units, gaffer Jim Denny and I decided that portability was a big factor, since the terrain was hilly and quite distant from vehicle access. We settled on 1200 and 2500 PARs as the primary instruments; they are extremely lightweight for the amount of light they provide, and their long throw helps out in difficult access areas.

While scouting locations, I discovered an interesting nuance to the forest's lightfall. On overcast days in the woods, the primary natural light sources actually were several discrete openings in the overhead canopy of branches. Looking carefully, I could see that this produced multiple, albeit subtle, shadows from people walking on the forest floor. This made me feel better about using the multiple PARs.

As the natural light faded each day, we depended more on the PARs. We found that with careful staging and the use of long lenses we could maintain the soft directional light on the actors and throw the PARs onto selected background trees to maintain the feeling of forest daylight.

During an especially complicated scene involving four characters, period autos and a boat at the river's edge, we ended up shooting almost in the dark (it was Michael J. Fox's last day on the shoot) as Rip Torn leaves Fox by his car and heads to the river. We had every HMI available cross-lighting trees in the background as the last rays of daylight were disappearing from the sky.

For an ambitious set that reproduced a 1927 carnival, complete with side shows, amusement rides and big tent, production designer David Wasco worked with local carnival veteran Paul Mayette to bring in authentic period machinery and decor. We had only one day to

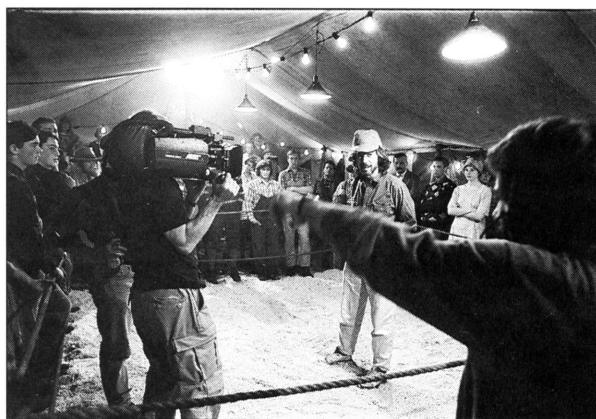
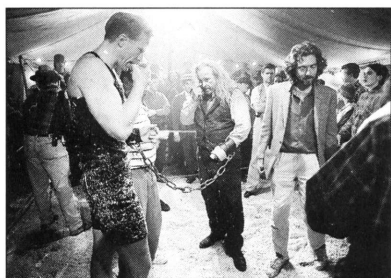
shoot several scenes on this set, all of which were to be in the proverbial "twilight." A sunny day was forecast and we were planning extensive silking operations to control the light. Of course, on the morning of the carnival shoot the 150 extras, the dozen period amusement rides and our crew were standing in a monotonous rain. The scheduling of the actors and extras prohibited us from moving to a cover set, and I was horrified at the thought of having to shoot a carnival scene in the rain.

As it turned out, the dreariness of the day helped us maintain a consistency throughout the filming. If you don't back-light rain you usually don't see it on film, so by eliminating back-light we were able to erase the visual evidence of rain; we resumed shooting every time the rain slowed to a light drizzle.

Given the low daylight level and grayness of the day, we decided to use strings of bare lightbulbs, originally intended for the interior of the carnival tent, as exterior accent lights.

Opposite: Noel (Rip Torn) loads cedar boughs in the foreground as director of photography Paul Ryan and his crew prepare for the shot. This page: For exterior scenes outside Noel and Bangor's cabin in the Vermont woods, HMI PARs on high rollers were used to extend the afternoon light.

Top: Fading afternoon light is punched up by HMI PARs during a 1927 period scene in downtown St. Johnsbury. **Bottom left:** Actors Rusty DeWees (left) and Rip Torn patiently await their "chain fight" as director Jay Craven (right) sweats the details. **Bottom right:** Inspired by *Raging Bull*, cinematographer Ryan (left) plots out the scene's camera moves with Craven.



Even at noon, we were exposing 5293 at T2.8 with the heavy overcast skies and periodic drizzle. For every scene, the electricians and art crew would rearrange the strings of lights to visually punctuate the foreground and background, while the gaffers aimed PARs from two Condor cranes to provide some directional light on the actors. In the end we were able to merge the dim and wet daylight with carefully modulated tungsten and HMI light to create a mystical and beautiful carnival atmosphere. This would not have been possible had we not been blessed with a normal bright day.

In the film, Noel challenges the carnival "chain fight" champion in a desperate effort to win the \$300 prize in order to pay the lease on his land. Never heard of a chain fight? Neither had anyone else on the shoot. It's an anything goes affair between two fighters manacled to each other with a three-foot length of chain; the one left standing is the winner. Once again we were forced

into a tight time slot to film the entire fight with no pre-blocking or preparation. I wanted a rough, hard edge light to the smoky tent interior, and used our strings of lightbulbs around the perimeter of the tent, behind the crowd of spectators, to give a sense of dimension to the space. The fighters were mainly lit by overhead "china hat" industrial lamps.

Given the time limitations, the only hope I had to get really dynamic footage was to get in the ring with the fighters and shoot most of the fight handheld. Inspired by the film *Raging Bull* (shot by Michael Chapman), I went for a point of view of one of the fighters, chained to the other, swinging around the ring. This plan was made even more interesting by the fact that Torn is given to unpredictable improvisation, especially in physical scenes, and that his character has

an iron hook to replace a lost right hand. (Entering the ten-foot-square fight ring, I also recalled the legendary fight scenes in Norman Mailer's *Maidstone*, during which things apparently got a bit out of control: Torn hit Mailer with a real hammer, and Mailer bit off a piece of Torn's ear.) We filmed Rip's ferocious attack with my handheld 18mm lens, and it proved to be a very exciting sequence. The only real damage was a bloody lip that Rip suffered when he got hit by the chain.

A location Jay and I came to love was the setting of Noel and Bangor's camp, which in the script is separated from the road to town by an expanse of water — a moat between civilization and the old logger's private domain. This was a wide cedar bog, most of it too deep to

walk in and too shallow for conventional boats. As with many of the locations, motor-driven vehicles were prohibited. It had the definitive look of an uncivilized Vermont backwoods, with rolling hills of pine and maples rising up behind the serpentine waterway.

Key grip Paul Nickason and the transportation department worked together to create an efficiently portable raft decked with plywood that served as our camera platform. We needed to get traveling shots low along the water level, and this rig worked like a water-borne dolly on a dance floor. I've always been a big fan of ball-leveling fluid heads, a throwback to my documentary days, and here they saved the day, since maneuvering an overloaded raft through water and marsh grass defied operating at any consistent level.

The ball-leveling heads made last-minute corrective changes easy.

I knew we might need supplemental light here as well, so Jim Denny set up a 2500 PAR on a High Roller Stand in a tiny rowboat that housed a Honda generator and an electric trolling motor. It was quite a sight as it made its way across the bog like some top-heavy denuded sailboat.

The rig also proved useful in a very wide establishing scene in a rainstorm on the bog, too big a scene for our minimal rainmaking capability. But with this guerrilla camera and light system, second-unit director of photography Chris Lombardi was able to rush out to get the shot when an unforecast rainstorm occurred.

In another scene requiring more rain than we were granted, traditional rain towers weren't available, so we prevailed on several local fire departments to work with special effects coordinator Bob Rickner. The most useful tool was a monstrous water cannon they called the "Deluge Gun." It put out enough volume so that I could arc the main stream over the action area, and the fallout curtain was enough to provide an even rainfall in front of the camera.

Another fight with nature was over the color of the foliage: several exterior scenes taking place in a single day of script time had to be shot over the several weeks of shooting, and we needed to maintain continuity over the apparent color of the trees. We were able to minimize the brilliant foliage color by shooting in strong backlight and overexposing the negative. Conversely, when we wanted to emphasize the color, we shot with more side or frontal light on the leaves.

For the film's interiors, we felt that a slight feeling of claustrophobia would be in order. The architecture of the region in the 1920s minimized win-

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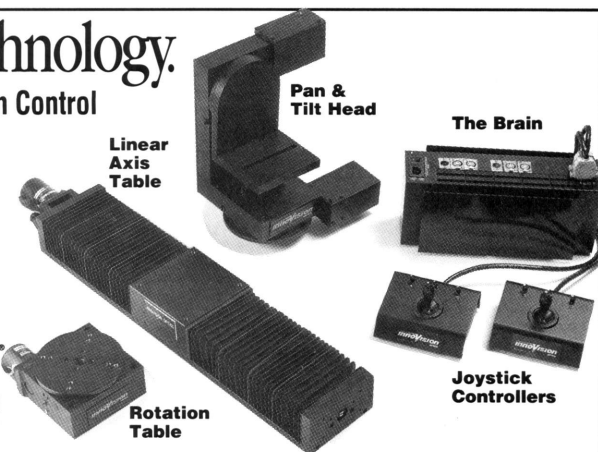
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TECHNICAL NOTES:

Camera: Arri BL4, Zeiss prime lenses (14, 18, 20, 25, 35, 40, 50, 85, 100, 135, 180), Cooke 20-100 zoom.

Film Stocks: Kodak 5293, 5296, 5297. (I had never used 5293 before, but as the film progressed I found myself shooting it more and more. It's a wonderful stock, and Kodak's 200 ASA rating is conservative. It can be pushed with no significant grain increase, although I did find that a one-stop push actually increased the effective film speed only half a stop. But that was still useful when I had begun an afternoon exterior sequence and didn't want to shift to 5296.)

dow size in favor of thick walls, and most of the script's interiors were small and cramped. We made up several small "Space Lights," three-foot-tall cylinders of silk enclosing a 1K quartz bulb. Eight-inch-wide black skirts were velcroed around the top circumference to control the directionality. These were versatile and mobile lights that could be hung from C-stands and moved in just to the edge of the frame to provide a soft directional light for the actors that would fall off rapidly and keep the walls in relative darkness. With three of these and a few small KinoFlo units, we were able to light most of the interiors quickly and simply.

As we were finishing the 30-day schedule, the Vermont winter snows began and ice was forming on the bog. Instead of waiting for the snowstorm to pass, we decided to take it as a blessing and staged the film's tragic ending scenes in the falling snow. The dailies looked beautiful, and both Noel's life in the woods and the film culminate with striking images of the conclusion of the seasonal cycle. ❧

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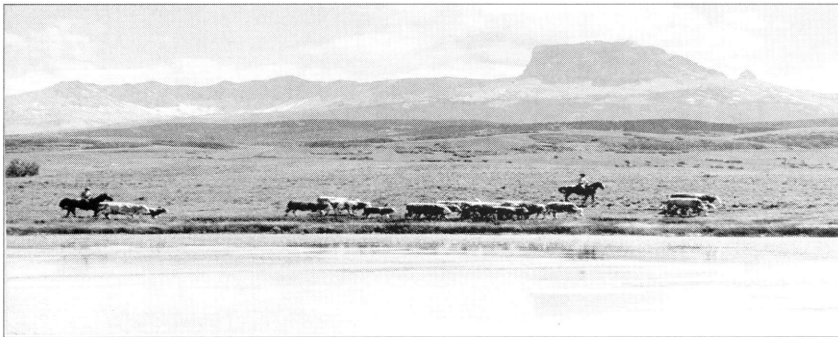
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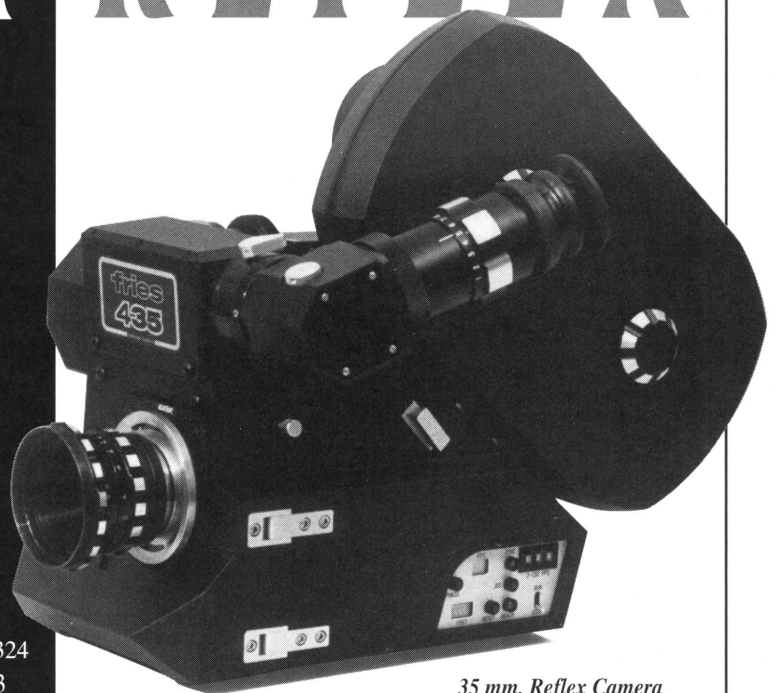
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The Seventh Coin: Shooting in a War Zone

Filming in the Middle East's geopolitical tinderbox requires caution and a special kind of tact.

by Jean Oppenheimer

On August 2, 1991, Iraqi strongman Saddam Hussein invaded Kuwait and threatened to shower Israel with Scud missiles if the United States retaliated. Two days earlier in Tel Aviv, American-emigre director Dror Soref and veteran Israeli cameraman Avi Karpik had begun shooting *The Seventh Coin* for Los Angeles-based Orbit Entertainment. A former Israeli army captain during the Yom Kippur War of 1973, Soref assured his nervous American and British actors that it would take several months for the U.S. to mount a counteroffensive and that filming would wrap well before then. "I told them they were safer in Israel than on the Los Angeles freeways," sighs Soref. "Statistically I was correct, but nobody bought it."

All-out war was actually of less immediate concern to the filmmakers than was terrorism, always a worry in the volatile Middle East. Over the summer, fundamentalist organizations had targeted Western tourists for attack; a few days before production began, a bomb went off close to the Tel Aviv hotel where the cast and crew were staying. "We Israelis are pretty used to it," says Karpik. "It's a daily routine here. But we were concerned about the Americans who came over, had nothing to do with the problem, and were all of a sudden in the middle of God knows what."

The Seventh Coin is not, itself, a political film. Rather, Soref's feature directorial debut is a youth-oriented romantic

adventure about the unlikely friendship that develops between a headstrong American girl (Alexandra Powers) on a school vacation in Israel, and the street-smart Arab boy (Navin Chowdhry) who steals her passport. Acclaimed British actor Peter O'Toole stars as a villainous English army officer who pursues the teenagers in his maniacal quest for the last of seven ancient coins minted by King Herod.

The filmmakers were faced with three overriding concerns: 1) safety; 2) the limited availability of O'Toole; and 3), from a purely technical point of view, the Israeli sun.

The geographic realities of the Middle East give new meaning to the concept of 'mid-day sun.' During the summer months, the sun remains suspended directly overhead from 10 a.m. to nearly 4 p.m., beating down with relentless intensity and casting harsh, unflattering light on all those caught in its glare. The lighting requirements of shooting in Israel were one reason Soref—who was born in Haifa but emigrated to the United States in 1976—hired Karpik.

"I wanted to have an Israeli cinematographer who understood the unique lighting situation we'd be confronting," Soref explains. "I also wanted someone who had American experience (Karpik has shot three films in the United States), as well as someone who could shoot at night without a lot of lights."

Shooting an average of 22 setups a day, Soref also needed someone who was fast and efficient. He asked his Israeli film sources for their opinion on who was the best cinematographer around, and the almost unanimous reply was Karpik.

The film's budget — \$900,000 plus deferments — was large by Israeli standards, but small for an American production. Soref explains that budgetary constraints forced the filmmakers to shoot "during the times that were most uncomplicated to the look we were trying to achieve. The concept I wanted for [Israel] was 'golden'; it's a uniquely spiritual place, like no other. But day exteriors are really problematic because of the harsh sun."

Speaking by phone from his home in the Israeli town of Rosh-Haia, Karpik explains how he tackled the problem: "I treated the negative in the lab to diminish the contrast (between) the shadows and the highlights. If there was a high contrast — wide, very sunny shots — I shot it overexposed a bit, which actually brings out the shadow area, and then I printed it down in the lab. If you have high contrast and you expose normally, the details in the shadows aren't there."

Produced by Lee Nelson
and Omri Maron

Directed by Dror Soref
Director of photography, Avi Karpik

The intensity of the sun and the unflattering light it cast upon both people and objects convinced Karpik to use Fuji film: the high-speed 8514 for exterior nights and all interiors, and 8530 for daylight exteriors.

"Fuji is somehow softer than Kodak, and for this particular story I wanted a golden, sunny illusion. People make a connection between heat and the color yellow, like the sun. Since Fuji is already warmer than Kodak, the warmth of the picture is built into the negative. Colors are richer, too, because it's more saturated. You can get the same effect with Kodak but you need to work harder for it."

Karpik started shooting *The Seventh Coin* two days after wrapping his previous job. His participation in preproduction was limited to the one day a week he had off from the other picture. In addition to his expertise in lighting and shooting, Karpik's intimate knowledge of the country proved a boon to Soref,

who adopted many of his cinematographer's suggestions concerning locations.

In one scene, the teenage protagonists flee their pursuers by slipping into a small opening at the base of a building. The opening leads to a cavernous underground area, supported by arches and filled with water. Karpik took Soref to the perfect location, a fortress situated in the old Crusader city of Ramla.

Karpik explains that water has always been a precious commodity in the arid Middle East. During the Middle Ages strongholds were built next to water sources (usually underground springs); the basement of the fortress acted as an indoor reservoir. The arches which still support the ancient ceilings contain ventilation holes — 20" x 20" — that served to circulate the air and keep the water fresh.

"Through those ventilations we had lights coming in," explains Karpik, "plus small units in the water to give a shim-

mering effect. We bounced the light off the water, using the water as a mirror, and moved the water so you have a rippling effect. I was standing waist high in the water with a camera."

Budgetary restrictions don't seem to bother Karpik, who is used to shooting on modest budgets; he routinely operates the Steadicam as well as the stationary camera. By way of explanation, he points to Israel's small size and population.

"Israel has only about four million people, which means the potential for a picture is so small that when you shoot you really have to do it low-budget. Even if you only spend \$300,000, you're already risking that you won't be able [to recoup]. Israeli films don't have the market that a low-budget American movie does. For example, Korean buyers would buy an American film but not an Israeli one.

"The industry is so small here that we have to learn to deal with very little means and to



*An unlikely bond forms between a street-smart Arab boy (Navin Chowdry) and an American girl (Alexandra Powers) on a school vacation in *The Seventh Coin*, shot on location in Israel.*

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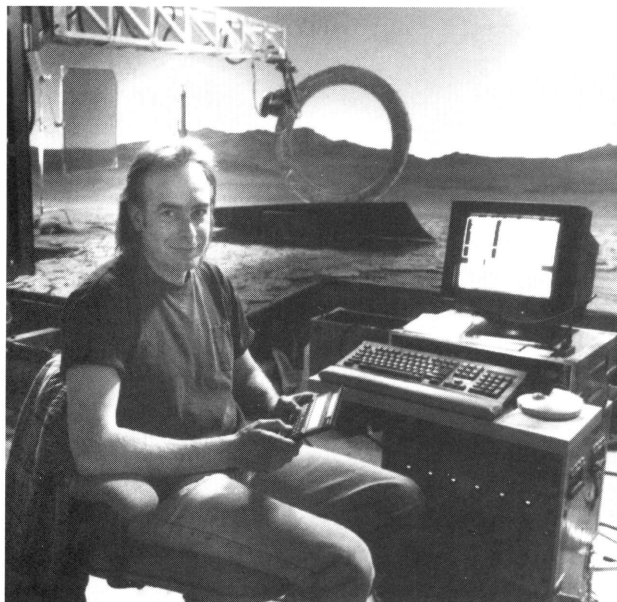


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compensate with a 'commando' sort of attitude," he adds, laughing. "We have no other choice if we want quality. We compensate with great effort, care, will and improvisation. In fact, I think our improvisational abilities are the greatest thing about Israelis."

By way of example, Karpik points to one of the lengthy chase sequences, in which O'Toole's henchmen pursue the teenagers through what appears to be a series of narrow alleys. With limited time to record the sequence, Karpik decided to shoot it all in one location.

"I put the camera on sticks and created an imaginary circle, which I marked for the actors. I stood in the center using a long lens, very tight, so that what happened in the background blurred. The actors keep going forward in a circle but you can't tell they are going in a circle; it seems like they are going straight. I turned 360 degrees; they could make two or three turns and the audience would never notice."

The Seventh Coin had an unusually long shooting schedule for a film made in Israel: eight weeks compared to the usual four to six. The reason was Peter O'Toole's own schedule; he was available for only four weeks. This meant that cast and crew had to visit each location twice — once to get the shots of O'Toole, the second time to get reverse angles of the other actors and anything else the filmmakers hadn't been able to shoot the first time around.

Shooting in such a piecemeal fashion presented a special challenge for the camera crew. Matching up the lighting didn't prove all that difficult because it was easy to mark where the lights were placed. The hard part was recapturing what Karpik refers to as the 'perfume' of the scene: the ambience and emotion, the amount of smoke used, or the balance between the key and fill lights. Karpik, who describes

himself as more of a "mental" cinematographer than a technical one, relied on his visual memory and intuitive skills to recreate the mood and look of the scene. He praised his small camera crew, singling out gaffer Avi Leibman for special mention.

Safety considerations remained uppermost in the minds of the filmmakers and dictated numerous production decisions. Night shooting in Jerusalem presented too many risks, so Jaffa substituted for the Holy City. But during the day, no other city in the world can replicate Jerusalem's distinctive look, so two weeks of the eight-week shoot were spent there.

Rather than descend upon the city with security forces and machine guns, the production tried to maintain a low-key presence. Precautions were taken in choosing locations,

and crew members — sometimes security guards — stood atop roofs or positioned themselves at the exits and entrances to the sites, to make sure no unauthorized individuals passed.

Terrorist attacks were only one hazard. The possibility of offending one or more of the city's various religious, ethnic, and cultural groups was another. Soref found his most potent weapon to be his public relations skills.

"All the groups had to be treated very gently," says the director. "It wasn't one particular group versus any other. We were shooting on the roof of a Yeshiva (an Orthodox Jewish school) building. They were upset and we had to talk to them. You have to respect everyone's religious needs."

Although predominantly Jewish, the production crew in-

cluded a handful of Arab-Israelis. Several of the supporting actors and a good number of the extras were also Arab.

According to Soref, Arab actors were anxious to do the movie. "This was the first time in a non-Arab movie where they are portrayed positively, just as people, not as terrorists," he comments. "The movie is not political. It's about people from different backgrounds, [in which] everyone is portrayed as just regular people."

'Regular,' however, is not a word that could ever be applied to Jerusalem itself. A city of unrivaled spiritual and historical presence, Jerusalem occupies a unique position in the world. Both Soref and Karpik wanted that sense to pervade the film. Asked how he went about accomplishing it, Karpik laughs: "Well, you go to Jerusalem and it's just

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there. You simply have to not ruin it!"

Karpik describes himself as story-oriented. His main concern on any film is to tell the story as well as possible. He contends that a lot of good movies are badly shot, while a number of impressive-looking films fail in the all-important task of conveying the storyline.

Soref echoes this point. "Avi was really working with what I was trying to do emotionally with the picture and not just trying to make something look incredibly great. He really understood and was concerned with making something work within the context of the characters and the story."

Karpik attributes his philosophy to working with cinematographer Adam Greenberg, ASC, who began his own career in Israel before moving to the United States. Karpik, who spent two years in film school before serving as Greenberg's assistant on several Israeli films, learned his most important lessons from Greenberg.

"I like to say that the school I belonged to consisted of learning from Adam," he explains. "The key point is the simplicity of things. What I learned most from Adam was his mature attitude toward filmmaking. If Adam begins a picture, it will end up on budget and on time, and the story will be told."

Just as Soref had predicted, filming wrapped before the United States mounted its counteroffensive against Iraq and Scud missiles began raining down on Israel. *The Seventh Coin* was the last film to shoot in Israel before the Gulf War began.

compiled by Marji Rhea



Dolly

Chapman's Pedolly has the capabilities of the traditional pedestal as well as the camera dolly and obtains a low camera mount height of 15 5/8" or 40cm, one of the lowest heights currently available on the market. The unit shares the crab and conventional steering and variable chassis leg features of the Super PeeWee while maintaining the ability to work on both straight and curved track. The Pedolly also has various tires for the different terrains encountered during the filming of productions. The maximum standard height of the Pedolly is 55 inches, or 1.42 meters. It can shift from crab to conventional steering either electronically or manually and has many accessories available.

For information: Chapman Studio Equipment, 12950 Raymer St., North Hollywood, CA 91605, (818) 764-6726, (213) 877-5309, FAX (818) 764-2728.

Lens and Filter Cleaner

Pancro Professional Lens & Filter Cleaner is made especially for camera lenses and filters for cinematography. It is recommended by Jon Fauer in his guide to the 35BL and 35-3 cameras,

The Arri 35 Book (1989), as first choice for cleaning large filters and second choice for lenses. This recommendation came as a result of an Olympic Arri camera-cleaning session staged by the author and others in which various cameramen were asked to eat a messy breakfast, handle their camera equipment, and then clean the equipment using a variety of lens-cleaning fluids, solvents, lens tissues, blowers, air cans and tools. The Pancro cleaner will not damage lens coatings or smear and streak filter surfaces. It is non-residue, non-toxic, non-corrosive on paint, anti-reflection coatings, shutter mirrors, and ground glass, and it is also safe for use on acrylics and resins. The cleaner was originally formulated for use on front surface mirrors, which the company still makes for scientific instruments.

For information: Pancro Mirrors, Inc., 12734 Branford, Unit 7, Arleta, CA 91331, (818) 834-2926, FAX (818) 834-2027.

SGI Software

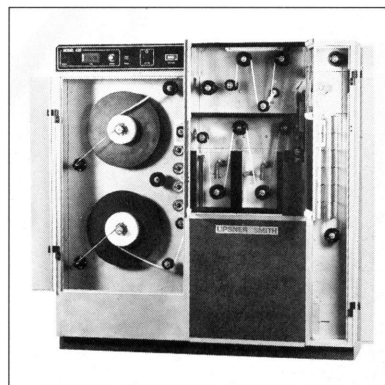
MetaVision's Imagination is a software package for Silicon Graphics workstations that provides image editing, image processing and painting capabilities, avoiding the need for a separate imaging station. Imagination is designed for 3-D video production, CAD and architectural visualization, graphic design, printing and publishing, and other applications that require still-image editing and painting capabilities.

The system supports 16 formats, including Alias Research, Apple MacPaint, Apple PICT, Adobe PostScript, SGI ImageLib, Sun rasterfile, TrueVision TARGA, Wavefront and X11 bitmap and pixmap. Features include a variety of predefined brush shapes as well as custom-design shapes and a four-channel color editor that supports RGB, HLS, HSV and CMY color models, with an additional alpha channel. Image processing capa-

bilities include complete cut, copy and paste editing functions and enhancement functions such as sharpening and blurring filters, contrast adjustment, increases and decreases in value, gray-scale conversion, and application of two-dimensional transformations such as scaling, mirroring, shear and rotation to selected regions of the image.

Titling/Annotation features include support of on-line X11 bitstream fonts in all sizes, and the ability to specify leading, kerning, justification and rotation angle of text.

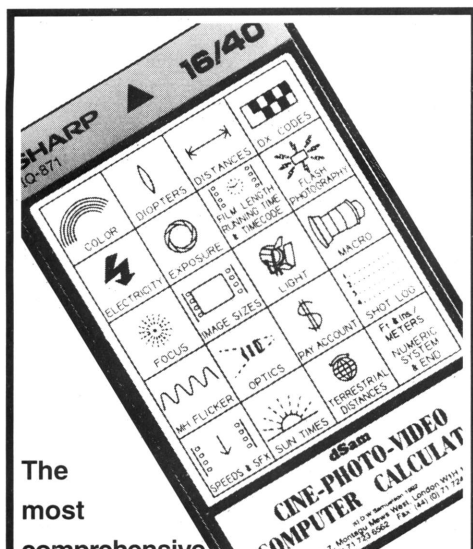
For information: MetaVision, (919) 829-9205.



Film Cleaning Machines

RTI has two new motion picture film cleaning machines. The Excel 700 and Model 403 remove dirt, dust and other debris from the film surface via four particle-transfer rollers. The film is then wet-cleaned by two soft-nap rotary buffers treated with a liquid cleaning agent, including water with surfactant additives, or ozone-safe fluorocarbon fluids. Following wet-cleaning, the film is gently polished, then transported through a warm-air drying chamber to ensure that the film is completely dry before being spooled. Film can be cleaned at speeds of up to 200 feet per minute.

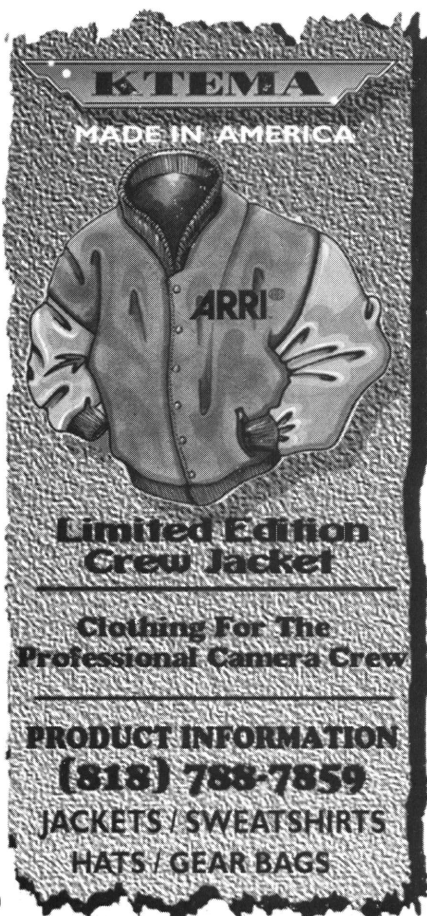
The unit needs less than eight square feet of floor space and operates



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The Model 403 is designed for around-the-clock use in film laboratories and uses a non-contact aqueous wash system with a surfactant additive, followed by filtered water rinse. The film then passes through an air knife followed by a heated air-impingement drying process. Safeguards throughout the system prevent abrasive contact to the film surface. 16mm and 35mm film can be cleaned at speeds up to 100 feet per minute.

Water used by the system requires no special treatment or disposal methods. The unit is fully enclosed to prevent ambient particulate contamination, and requires only nine square feet of floor space. It uses 115V, 60 Hz of power.

For information: Lipsner-Smith Company, 4700 Chase, Lincolnwood, IL 60646, (708) 677-3000, FAX (708) 677-1311.

Charger and Lighthouse

The new Frezzi-Pag AR124NP Charger, designed especially for NP1 and BP90-type batteries, accepts four NP1-type and four BP90-type batteries via direct connection. Using optional adapters, the AR124NP can also charge any battery in the range of 4.8 to 14.4V (1 to 7Ah). All AR-series Frezzi-Pag chargers utilize Pag ACS (Advanced Charging System), a true digital two-wire system that prevents overcharging and will automatically maintain peak capacity after the main charging program. The charger has a recovery program for over-discharged batteries, and will also operate anywhere in the world with its high-frequency switch-mode power supply. The AR124NP is designed to operate with the optional D124NP Discharger. The combination of charge and discharge cycles maximizes cell life.

For information: Frezzi Energy Systems, 5 Valley St., Hawthorne, NJ 07506, (201) 427-1160.

DAT Tape

Apogee has released a premium DAT tape designed for the rigors of professional audio applications. A primary feature of the new tape is its longevity. In tests, the Apogee DAT has been shown to have a useful archive life of over 30 years, due to the use of spe-

cial anti-corrosion particles. To achieve the data density required by the DAT recording process, iron particles are used rather than the oxide found in conventional magnetic tapes. The process used to create the Apogee DAT coats each particle with an anti-corrosion coating, which keeps the error rate low for many years.

Other benefits of the Apogee DAT include higher output and lower overall error rates. In addition, the entire shell has been redesigned and is the subject of 15 patents. New friction sheets ensure that the tape runs more smoothly and the wind is more even. Special hub clamps minimize end-of-tape damage.

Apogee DAT tape is available in standard pro-audio industry lengths. Cases are also available, specially designed for the pro-audio industry: the MasterPak holds two tapes while the ProjectPak holds ten. Both have space for track labeling on the outside of the case.

For information: Apogee Electronics Corp., 3435 Ocean Park Boulevard #211, Santa Monica, CA 90405, (310) 314-1700, FAX (310) 452-4343.

Filters

Lee Filters' Surprise Peach 017, Sunset Red 025, Lime Green 088, Spring Yellow 100, English Rose 108, Summer Blue 140, Marine Blue 131, Lilac Tint 169, Lagoon Blue 172 (also available in high-temperature option), Palace Blue 198, Double CTB 200, and BlackFoil 280 are the newest additions to its product line. The gels are available in 25' X 48" rolls or 24" X 21" sheets. The high-temperature Lagoon Blue comes in a 13' X 46" roll or 21" X 22" sheet. BlackFoil 280 is available only in rolls of 25' X 24".

For information: Lee Filters, 1015 Chestnut St., Burbank, CA 91506-9983, (818) 843-1200.

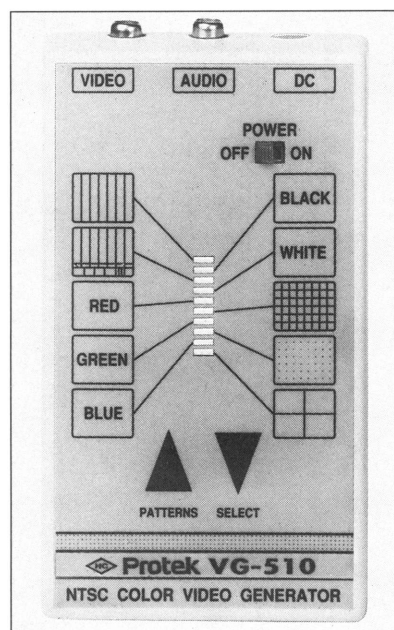
Location Lights

Videssence's new line of location lights, Vid-lites, emit sustained RGB light and are designed to be rugged, transportable, and have stackable fixtures. The line has three different fixtures: the small-zone 100, the medium-zone 200, and the large-zone 300. All three models are energy-efficient due to fluorescent-based technology, have low power requirements of 125, 250, and 375 watts, respectively, and have high light outputs of 9,570, 19,140 and 28,710 lu-

mens, respectively. Each fixture can be used as either a broad or fill fixture. Without accessories, these instruments basically replace 1,000-2,500-watt incandescent flood lights.

Each light is available in either 120 or 220 voltage for international use and comes with accessory kits that include hammered aluminum shipping cases and stands.

For information: Videssence, (800) 697-7033.



Video and Audio Generator

HC Protek's Model VG-510 NTSC video and audio generator provides more than 40 hours of operation on four AA batteries and offers ten test patterns, including SMPTE, black burst, full field color bars, red, green, blue and white fields, center pulse cross, cross hatch and dots. Black burst may be used to lay down black on tapes and record SMPTE color bars with tone at the beginning of the tape. Audio output is 1KHz with an adapter included for 120V studio use.

The unit measures 5½" W x 3¼" H x 1½" D and weighs 7.5 ounces without batteries. Specifications include Composite Video Out 1 Vp-p into 75 Ohms; polarity positive and sync negative; 525 2:1 interlace scanning lines; horizontal line frequency of 15,734 KHz; 59.94 Hz vertical field frequency; and 3.579545 MHz ± 10 for color subcarrier frequency.

For information: Protek, 154

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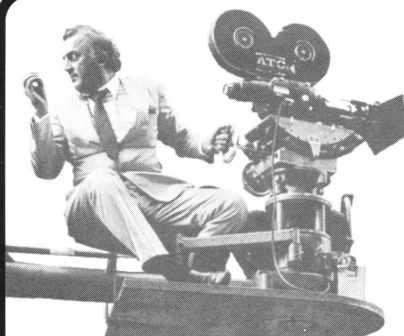
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Graphic Arts Digital Camera

Cosmos Communications and Roche Image Analysis Systems of Elon College, N.C. have entered into an agreement to market a customized graphic arts version of Roche's High-Resolution Digital Camera. Cosmos customized the camera and image processing software to create a comprehensive integrated turn-key digital system which includes controlling software for interactive composition, focus and lighting control, and features variable resolution, custom color conversion tables, high-speed image telecommunications capability (for remote viewing with virtual real-time conferencing using "dueling cursors") and image databasing.

The camera system was originally developed to capture database and telecommunicate high-resolution images for interactive viewing. The camera has been used by Hollywood special effects and animation houses for work on *Beauty and the Beast*, *The Last of the Mohicans*, and *Alien*³.

The KanImage GA Camera utilizes patented Piezo Aperture Displacement technology. The CCD area array's ability to capture pixel information is dramatically increased by Piezo crystals which literally move the CCD to capture all light impulses, even those that would have fallen between the photosensitive areas of a CCD array. The result is a 12-bit camera with a dynamic range of 3.4 (exceeding that of the human eye) and variable resolution from 500 lpi up to 3072 X 2320 lpi.

For information: Cosmos Communications, 11-05 44th Drive, Long Island City, NY 11101-5107, (718) 482-1800, FAX (718) 482-1968.

VTR Controllers

Videomedia's V-LAN-compatible controllers for single-VTR applications are single-machine (videotape or videodisc) solutions for frame-accurate animation recording, presentation and authoring applications. The industry standard V-LAN command protocol is used for reliable, frame-accurate control of professional- and industrial-quality video devices.

The V-LAN Express is a single-

machine controller for RS-232 and RS-422 video machines. As a single-machine controller, it does not require a V-LAN transmitter and does not connect to a multiple-machine control network. V-LAN Express uses the V-LAN 3.0 command protocol currently designed into all popular animation software applications.

V-LAN Express connects to any computer with a serial port and therefore the end user does not have to purchase a separate product for each computer type used. V-LAN Express controllers are small enough to be carried with portable computers, allowing the user to conveniently control mobile animations and multimedia presentations.

Macintosh users gain an added benefit when combining the V-LAN Express controller with the new MacAnimator Pro V-LAN software. MacAnimator Pro V-LAN provides rotoscoping and overlaying of QuickTime movies, PICT and PICS files. Also featured in MacAnimator Pro V-LAN is the FastPass mode. FastPass provides dramatically faster performance and reduces wear and tear by recording or capturing multiple frames (including audio) during each pass of the tape.

Videomedia also has support for Microsoft MCI-VCR specifications that standardizes the software interface between Microsoft Windows-based applications and videotape machines. The MCI-VCR V-LAN driver can be used with any Windows application that supports the MCI-VCR interface.

For information: Videomedia, 175 Lewis Road, San Jose, CA 95111, (408) 227-9977, FAX (408) 227-6707. ☎

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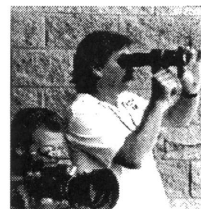
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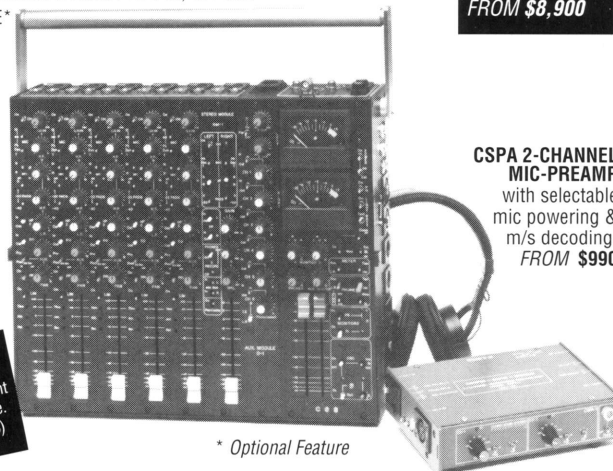
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Creating Another Bonfire in Manhattan

by Brooke Comer

The Plaza Hotel went up in flames for a scene in Stephen King's apocalyptic ABC-TV miniseries *The Stand*, produced by New York's own Richard Rubinstein of Laurel Entertainment. Located on the edge of Central Park, the turreted hotel radiates a castle-like presence in the city, and when the structure burns down in the film, it epitomizes the city's destruction. But is it legal to set a landmark location ablaze?

While the entrepreneurially savvy Donald Trump, who owns the hotel, is generally enthusiastic about loaning out the Plaza to filmmakers, the mogul quite naturally draws the line at actually burning the place down. No matter how talented the pyrotechnics team, Trump and his insurance company wouldn't let even a supervised fire rage from the penthouse towers. So how did *The Stand* get its convincing scenes?

Ask the experts at New York-based R/Greenberg & Associates East, whose Hollywood-style effects have graced feature films such as *The Last Action Hero* and *The Shadow*. On *The Stand*, live-action shots were blended in a digital editing suite to create the effect of a burning building. Trump didn't mind a bit, since the actual fire scenes were shot on Randall's Island and his hotel didn't see so much as a smoke stain.

Trump approved the script when he realized the hotel would be absolutely safe. "Frankly, if people want to use the Plaza Hotel in their movies, we're very happy to accommodate them," he says. "Because it's not only good for the Plaza, it's good for New York. The film industry was once huge here, but it's since moved to the West Coast. We're doing everything we can to bring more moviemaking to New York. There's still a healthy film industry here."

Enter R/Greenberg, an equally healthy effects house unique to the East Coast. The company evolved under the wizardry of principal Bob Greenberg, who

thought *The Stand* would be a good opportunity to combine different effects and traditions, from print retouching to compositing, while providing a chance to let effects solve problems in a cost-effective way. "Imagine the expense," observes R/Greenberg's supervising producer Nancy Bernstein, "of shooting this scene without effects. You'd have to shoot real flames out of the Plaza, shut down Fifth Avenue, and turn out all the lights in the skyline to show the electrical blackout that the destruction brings about." In other words, it would be virtually impossible. But making the impossible possible is R/Greenberg's job.

Bernstein, along with visual effects coordinator Ed Manning, digital video supervisor Ken Eyring, senior pyrotechnician Edward Drohan, miniature model supervisor Frank Gallego, digital video editors Frank Lantz, Paul Agid, and Burton Scott, and line producer Bob Swenson, met with Lauren Entertainment's postproduction supervisor Mike Gornick, director Mick Garris and director of photography Peter Fernberger to discuss the design of the shots. "Mick wanted a look of total devastation," Bernstein explains. The destruction, brought on by an evil force in the storyline, has cut off electrical power, so the Manhattan skyline is visible as a darkened mass beneath an ominous, purple sky. The shot, which extended down Fifth Avenue and included the hotel, had to convey devastation, death, darkness, charred buildings and blackened rubbish in the streets. "Shooting effects is the most collaborative kind of process," says Fernberger. "You have to let your small molecule of participation lend to the creation of a seamless reality. And we faced a difficult challenge. In *Gone with the Wind*, the producers just lit a match and brought the camera in. You can't burn down the Plaza."

Garris chose to light the Plaza

on fire because its renowned and formidable architecture gave the ruination of the city more credibility. "The burning of the Plaza was a four-step process," Bernstein explains. A background plate of the hotel was shot between the hours of dusk and night, so that different lights could be combined to get just the right look. Cinematographer Fernberger used 5293 stock to get blacks as dark as possible. Next, a scaled-down, skeletal model of the upper floors of the hotel (where the flames were to shoot out) was built. The 15- to 20-foot miniature had a facade but it was not a finished structure; "We only needed to rig it and light it on fire, without really sending it completely up in flames," Bernstein says, explaining that the goal was to get the fire to interact with the model as if it were the real hotel. "The flames had to lick and curl out of the tower windows and off the top of the roof as if they were wrapping themselves around the building." The finished shot would then be ready to be composited into the final source.

Flame scenes took place on Randall's Island "because it was the only place they'd let us shoot," says Bernstein. "We had a heck of a time finding a location." She credits New York Film Commissioner Richard Brick and his office for helping the crew gain access to the site. Two hundred feet of black velvet was hung off the entrance ramp of the bridge, and the burning model was filmed against it. The model sat on high scaffolding to achieve a believable perspective and angle; the scene was then shot with the same lens and the same 5293 stock that were used for the actual hotel. Fernberger chose to shoot at a slightly higher speed than normal to give the flames a slower, more majestic appearance. Fernberger used an 18mm Zeiss on his Mitchell Frieze, while the original footage was shot with a 14mm Panavision lens. "The corners of the

18mm Zeiss are distorted enough to match the Panavision lens," explains the cinematographer, who eye-matched the footage.

Garris also wanted a burning car in the vicinity of the Plaza. An actual car was found at a car wreckage site and after the gas lines were removed, it was also set ablaze on Randall's Island. Fire trucks kept passing the smoke-filled location, "but they weren't there for us," Bernstein notes. "It just happened that we were shooting near [an area] where firemen are trained." Both the model and the car provided smoke when they were set on fire. Black smoke and white smoke were later double-exposed into the shot.

The next step involved re-touching the background plate to lose all street and building lights, and any signs of electricity. "We used two shots from the live-action shoot," says Bernstein. "One for the delineation of the buildings, which had to be visible even though it was dark, and another one for the night effect, so we could show this really dark sky." If the scene was actually shot in the dark, the skyline would be obliterated. Additional retouching allowed for the addition of charred spots on buildings and burned rubbish on the streets. R/ Greenberg's print department was able to utilize electronic retouching equipment technology to manipulate some of the images. "Our print department has been involved with broadcasting before," Bernstein notes, "and though it isn't very common, it worked out well." The work was shared by an in-house Digital Paint Suite.

All the footage was transferred to D-1, and composited for final tweaks and effects: the smoke was double-exposed in, the car was positioned and matted in, "and we had a finished project," says Bernstein.

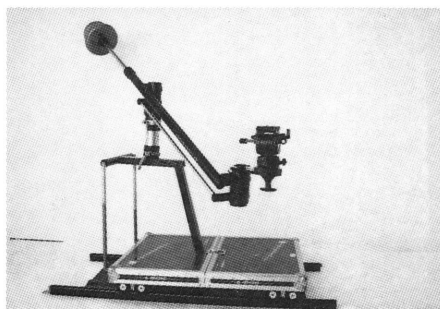
Everyone was happy with the results — even Donald Trump, whose enthusiasm for show business suggests there might be a D/Trump Associates in the New York future. Is there? "People ask me about that," Trump chuckles. "But I enjoy doing what I'm doing right now." Ditto for Bob Greenberg, who responded in similar fashion when asked if his real estate speculations would eventually establish an empire run from Greenberg Tower.

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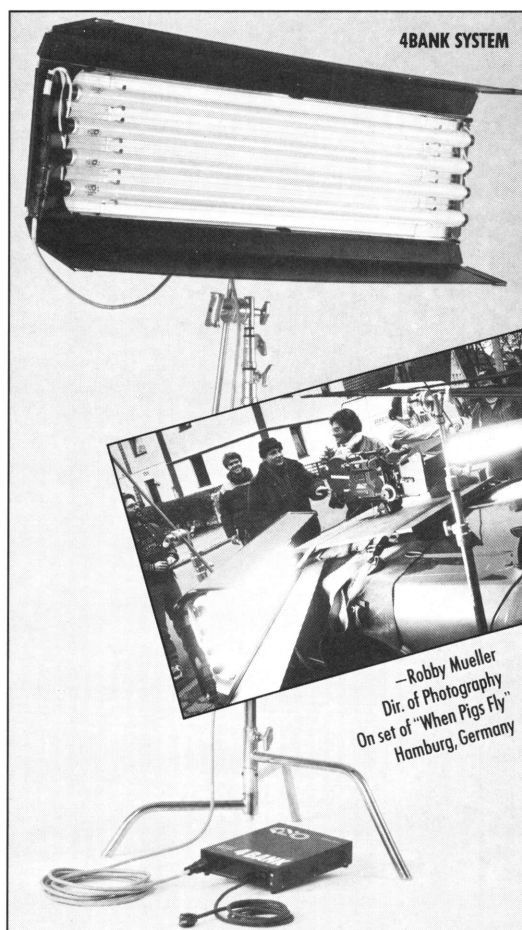
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Book Reviews

by George Turner

Reframing Culture

by William Uricchio
& Roberta E. Pearson
Princeton University Press
252 pps., paper, \$16.95,
cloth, \$45

Vitagraph, the largest of the New York studios during the early part of the century, made numerous films based on literary classics, historical events and Biblical lore between 1907 and 1910 in an attempt to gain respectability for the toddling industry. As this was the era of the short story on film, most of these were one-reelers. The mere thought of condensing Shakespeare's *Julius Caesar*, noted mostly for its language, into 950 feet of silent pantomime with telegram-like subtitles is somewhat mind-boggling. The producers, undaunted, referred to their literary, historical and Biblical adaptations as "The Vitagraph Quality Films." Vitagraph's head men, Albert E. Smith and J. Stuart Blackton, both of whom were artists before becoming interested in the new art of moving pictures, were able to do a better job under the circumstances than most of their rivals.

Historians have all but ignored these curiosities, but Professors Uricchio, of the University of Utrecht, and Pearson, of the University of Pennsylvania, have made in-depth studies of seven of these films and situated them in the context of their time, a period of heavy immigration, labor upheavals and cultural clashes. Their approach provides a contemporary audience-eye viewpoint that is conspicuously lacking in most backwards glances at the movies. This, in combination with intelligent utilization of primary resource materials, offers the next-best thing to being there. It is, after all, the real world that has changed with the times, not the movies made during those times.

That motion pictures had successfully risen in a few years from a despised "cheap amusement" to a respectable form of entertainment was demonstrated in 1912, when Vitagraph pre-

sented, for the first time in history, a 35-minute program of its historical subjects to the President and several cabinet members in the White House. It was reported that President Taft was "visibly and deeply impressed" when President Lincoln was depicted in one of the films. The authors make a convincing case that the "Vitagraph Quality Films" series played an important role in improving the cultural status of the movies.

The pictures discussed at length are *Francesca da Rimini*; *Julius Caesar*; *The Life Drama of Napoleon Bonaparte and the Empress Josephine of France*; *Napoleon, the Man of Destiny*; *Washington Under the British Flag*; and *Washington Under the American Flag* — all one-reelers — and the five-reel *Life of Moses*. Its academic origins notwithstanding, the book's language is straightforward, facts are presented without any of the "what so-and-so really seems to be telling us" nonsense, and the text is at least 20 times as long as the footnotes. This is a scholarly piece of work in the best sense of the term.

A Pound of Flesh

by Art Linson
Grove Press
195 pps., cloth, \$18

Producer Art Linson's many credits include *The Untouchables*, *Melvin and Howard*, *Casualties of War* and *This Boy's Life*. When he takes time out to write a "how to" book for (in his words) "that small and perhaps unfortunate group of people who are thinking about becoming movie producers but do not know how to do it or where to start," he deserves to be read. As witty as he is informative, he shares here "the many torturous stories that have helped me build the kind of scar tissue necessary to stick around in Hollywood." He never suggests that it's easy.

The work is subtitled "Perilous Tales of How To Produce Movies in Hollywood." We are taken the whole route, from initial idea through interminable

meetings with agents, executives and writers; casting, cursing, packaging; and finally facing the music on opening night. Humor and horror are equally dispensed in these adventurous tales of failure and triumph.

This journey through Ulcerville is exceptionally well-written and should be a hit with anybody in the industry, even those who aren't sappy enough to think they should produce a movie.

Cinema: The First Hundred Years

by David Shipman
St. Martin's Press
384 pps., cloth, \$50

Appropriately, this big, beautiful tabletop book was published on December 3, just four days before the 100th anniversary of the first patent for a moving picture, Thomas Edison's *Fred Ott's Sneeze*. Scenes from that movie landmark and about 500 others that followed are beautifully reproduced in black & white, duochrome and full color. Britain's David Shipman takes us on a crash course through a century of cinema, in which some 2,500 titles are discussed concisely.

If a thousand movie aficionados were to select the films they would include in a commemorative volume like this, the result would be a thousand very different books. There would be some "standards" common to all — *Melies*, *The Great Train Robbery*, *The Cabinet of Dr. Caligari*, *The Battleship Potemkin*, *The Ten Commandments*, *Gone with the Wind*, *Citizen Kane*, *The Godfather*, etc. — but after those obvious choices it's a wide-open field. Shipman's choices are all solid products worthy of inclusion (even the ones he criticizes adversely), but there's nary a nod to such industry stepchildren as serials, non-epic Westerns or the occasional Poverty Row classic. The brief descriptions of the films tell a lot in few words and are peppered here and there with deft touches of humor. Directors get mentioned but the writers and crew are mostly left out in the cold, as usual. The writing is gutsy; anyone who admits in print that he doesn't care for *Caligari* or *Citizen Kane* is no shrinking violet.

You might not agree with every word, but the big book is a good read and the photos, a mix of the rare and the familiar, are wonderful.

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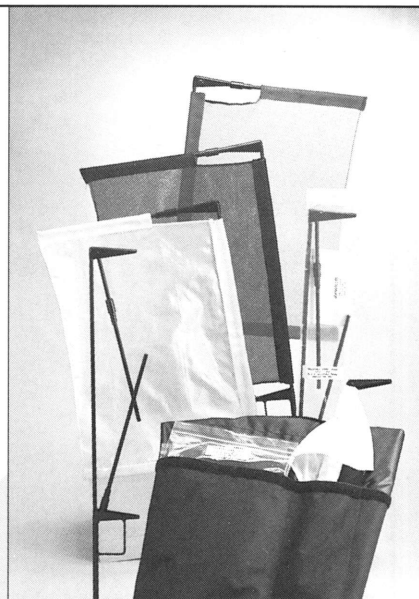
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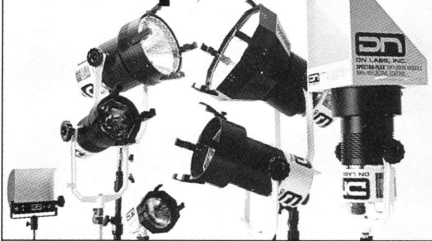
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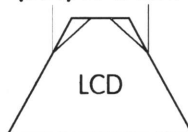
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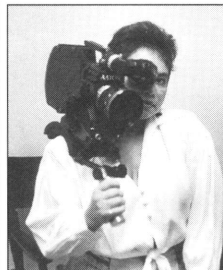
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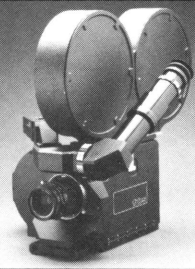
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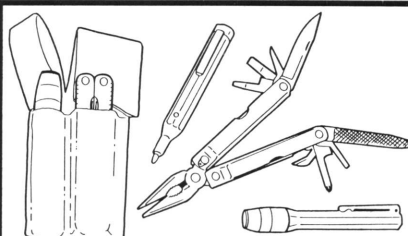
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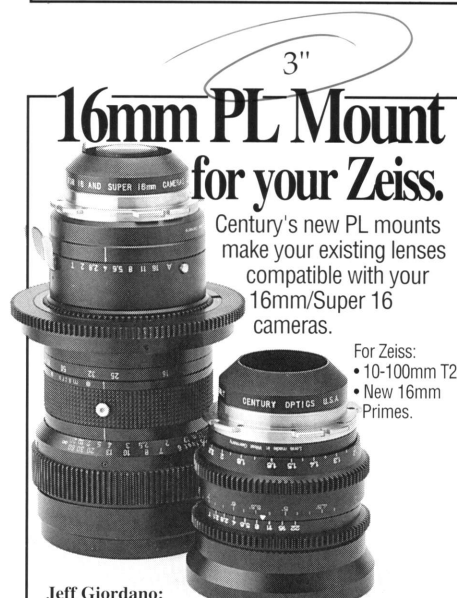


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From the Clubhouse



The December meeting of the Board of Governors yielded two more talented and deserving additions to the ASC. Cinematographer Fred Elmes was named an active member while ATS Corp. Chief Operating Officer Jan Yarbrough was awarded associate membership.

A Fellowship at the American Film Institute in 1971 brought Orange, N.J. native Elmes to Los Angeles, where he met David Lynch and served as cinematographer on the director's surreal first film, *Eraserhead*, still a staple on the midnight movie circuit. He also met John Cassavetes at the AFI and photographed two of the late actor/director's films, *The Killing of a Chinese Bookie* and *Opening Night*. In 1985 Elmes again hooked up with Lynch on the daring and highly acclaimed *Blue Velvet*, for which he received several awards including the National Film Critics Award for best cinematography. Among the other credits on Elmes' eclectic resumé are *River's Edge*, *Permanent Record*, the short film *Tristan and Isolde* (part of *Aria*), *Wild at Heart* and *Night on Earth* (Elmes won the Cannes Film Festival Spirit Award for Best Cinematography for each of the last two films). His most recent feature film credit is 1993's *The Saint of Fort Washington*. Elmes has also photographed numerous made-for-television movies, commercials and music videos.

Jan Yarbrough holds over 19 years of experience in film and tape production/postproduction operations and management. Born in Pasadena, he was employed at Hollywood's TransAmerican Video in the 1970s, working in the areas of film/television audio production, videotape duplication and editing, video control and telecine. Yarbrough pioneered the NTSC capabilities of the Rank Cintel Flying Spot Scanner film transfer device at Ruxton, Ltd., and was responsible for research and development of the first Rank Cintel Topsy Color Correction System at Starfax. He was instrumental in the growth and development of AME, Inc., serving as vice president of technical operations and president/chief executive officer. In September 1993 he

became chief operating officer and executive vice president of ATS Corp. in Burbank. Major studios often request Yarbrough as a special consultant to evaluate new equipment, procedures and proprietary technology.



In conjunction with their Heritage Film Series, The Society of Operating Camera-men honored Kemp Niver, ASC with their Governors' Award in October for his long-time contributions to film history and restoration, including his celebrated work with the paper print collection of the Library of Congress.

Bromide paper copies possessing the same width and length as original film negatives were the only way for film producers to protect their investments in cinema's nascent days. In the late 1930s, barrels of the battered paper prints were discovered in the basement of the Library of Congress. After two decades of unsuccessful attempts to turn the paper back into film, the Library of Congress and the Academy of Motion Picture Arts and Sciences gave the task of reorganizing the Film Archives to Niver, a logical choice since he had originated the bromide prints.

Niver had to painstakingly rephotograph the motion pictures frame by frame. Since standards didn't exist for characteristics such as film widths and sprocket rolls on the original movies, Niver invented what he terms a "figment" printer that could accommodate any size of film. Beginning the project in 1950, Niver and his Hollywood restoration team had converted over a half-million feet of paper and some 3,000 titles by the end of the decade.

Among the films Niver restored were 25 of director D.W. Griffith's works and all of actress Mary Pickford's early films ("I once showed Mary two films that she forgot she made!" Niver laughs), as well as films made between 1895 and 1905. "There are no secrets anymore," he states proudly.

Always fascinated with cinematography, Niver said that he could

recognize specific cinematographers' camera techniques and styles through the extensive restoration process. "People love to shoot movies," he adds, "but I wanted to know where the movies were going once they were shot."

Niver was awarded an Oscar in 1954 for his restoration efforts and is also the author of 11 books on various film-related topics. "[The restoration] was something I could do that had a little bit of individuality," he explains. "I've been able to eat pretty well on that for 25 years."



Evelyn Venable, 80, stage and screen actress, died of cancer on November 16 at her daughter's home in Post Falls, Idaho. She was the widow of Hal Mohr, ASC, Academy Award-winning cinematographer and former president of the ASC. Venable is best remembered for her film roles opposite Fredric March in *Death Takes a Holiday* and with Will Rogers in *The County Chairman* and *David Harum*.

She was born in Cincinnati on October 18, 1913, daughter of Professor and Mrs. Emerson Venable. She made her name in classical drama on the Broadway stage as leading lady to Shakespearean actor Walter Hampden. Her stage appearances included *Dear Brutus*, *Cyrano de Bergerac*, *Hamlet*, *Romeo and Juliet* and Max Reinhardt's production of *A Midsummer Night's Dream*. She entered pictures in Paramount's *Cradle Song* in 1933.

During the next ten years she worked for most of the major studios in such films as *Double Door*, *Mrs. Wiggs of the Cabbage Patch*, *Alice Adams*, *The Little Colonel*, *Vagabond Lady*, *Harmony Lane*, *Streamline Express*, *Star for a Night*, *North of Nome*, *Happy Go Lucky*, *My Old Kentucky Home* and *The Frontiersman*. She also provided the voice of the Blue Fairy in Walt Disney's *Pinocchio*.

She also appeared, unbilled, at the beginning of hundreds of movies as the original model for the statue insignia of Columbia Pictures.

Congress Salutes Classic Films

The Library of Congress added 25 films this month to its National Film Registry List, bringing to 125 the number of pictures that have been saluted for their historical, cultural and aesthetic significance. Since 1988, the library has collected and preserved archival copies of the registry films in their initial release form.

More than 900 films were nominated by the public this year and sifted through by the National Film Preservation Board, which includes academics and representatives from the Screen Actors Guild, the Directors Guild of America, the National Society of Film Critics, the Academy of Motion Picture Arts and Sciences and the MPAA. Librarian of Congress James Billington then made the final selection.

The films and their cinematographers are:

An American in Paris, 1951,
John Alton, ASC (ballet sequence)
and Alfred Gilks, ASC

Badlands, 1973,
Brian Probyn; Tak Fujimoto;
and Stevan Lerner, ASC

The Black Pirate, 1926,
Henry Sharp, ASC

Blade Runner, 1982,
Jordan Cronenweth, ASC

Cat People, 1942,
Nicholas Musuraca, ASC

The Cheat, 1915,
Alvin Wyckoff, ASC

Chulas Fronteras, 1976,
Les Blank

Eaux d'Artifice, 1953,
Kenneth Anger

The Godfather, Part II, 1974,
Gordon Willis, ASC

His Girl Friday, 1940,
Joseph Walker, ASC

It Happened One Night, 1934,
Joseph Walker, ASC

Lassie Come Home, 1943,
Leonard Smith, ASC

Magical Maestro, 1952,
(animated)

March of Time: Inside Nazi Germany—1938,
1938,
(newsreel documentary)

A Night at the Opera, 1935,
Merritt B. Gerstad, ASC

Nothing But a Man, 1964,
Robert Young

One Flew Over the Cuckoo's Nest, 1975,
Haskell Wexler, ASC; Bill Butler, ASC;
and William Fraker, ASC

Point of Order, 1964,
(documentary)

Shadows, 1959,
Erich Kollmar

Shane, 1953,
Loyal Griggs, ASC

Sweet Smell of Success, 1957,
James Wong Howe, ASC

Touch of Evil, 1958,
Russell Metty, ASC

Where Are My Children?, 1916,
Al Siegler, ASC and Stephen S. Norton, ASC

The Wind, 1928,
John Arnold, ASC

Yankee Doodle Dandy, 1942,
James Wong Howe, ASC

We congratulate
everyone connected with
Schindler's List
a film by
Steven Spielberg

Janusz Kaminski
Director of Photography

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